INFORMATION REDACTED PURSUANT TOTHE FREEDOM OF INFORMATION ACT (FOIA), 5 U.S.C.552(B)(6)

PE19-004

KIA

TAB 66_PI1802WX_TSB_R4 - submitted on line

	GROUP	MODEL
KIA	**Product Improvement**	**See Model List on Page 1**
	NUMBER	DATE
	PI1802W/X (Rev 4, 04/03/2019)	**October 2018**

PRODUCT IMPROVEMENT CAMPAIGN

SUBJECT: ENGINE REPLACEMENT INSTRUCTIONS FOR DTC P1326 (PI1802W/X)

★ NOTICE

This bulletin has been revised to include additional information. New/revised sections of this bulletin are indicated by a black bar in the margin area.

This bulletin provides information related to the Technical Service Bulletin previously published in July 2018 (PI1802, Rev 6, 01/31/2019) titled "Knock Sensor Detection System - ECU Logic Improvement". Specifically, this bulletin provides instructions on which procedures to follow if, after installation of the KSDS, any one of the subject vehicles below returns to the dealer with Diagnostic Trouble Code ("DTC"), P1326.

Year	Model	Engine	Production Date
2014	Optima (TF)	2.4L GDI	8/29/13 – 4/25/14
2015-2018	Optima (TF/QF/JF/JFa)	2.4L & 2.0L T-GDI	4/16/14 – 7/11/18
2014-2018	Sportage (SL/QL)	2.4L & 2.0L T-GDI	9/30/13 – 4/5/18
2015-2018	Sorento (XMa/UMa)	2.4L & 2.0L T-GDI	1/3/14 – 3/7/18

If DTC P1326 is present, first check for any wiring signal interference following the procedure set forth below before determining whether an engine replacement is necessary. Based on the results of the Wiring Signal Interference Check, dealers are to perform either the Knock Sensor Wiring Repair or, if the engine noise inspection result confirms it, the Engine Long-Block Replacement, according to the procedures in this TSB.

If the vehicle's engine is already seized or severely knocking, dealers are to perform the Engine Long-Block Replacement **and** the Wiring Signal Interference Check according to the procedures in this TSB.

A Vehicle Diagnosis Number (VDN) must be created with DTC P1326, prior to performing PI1802W/X. If a VDN is not created, Warranty claim submission issues may occur.

Before conducting the procedure, verify the vehicle is included in the list of affected VINs.

★ NOTICE

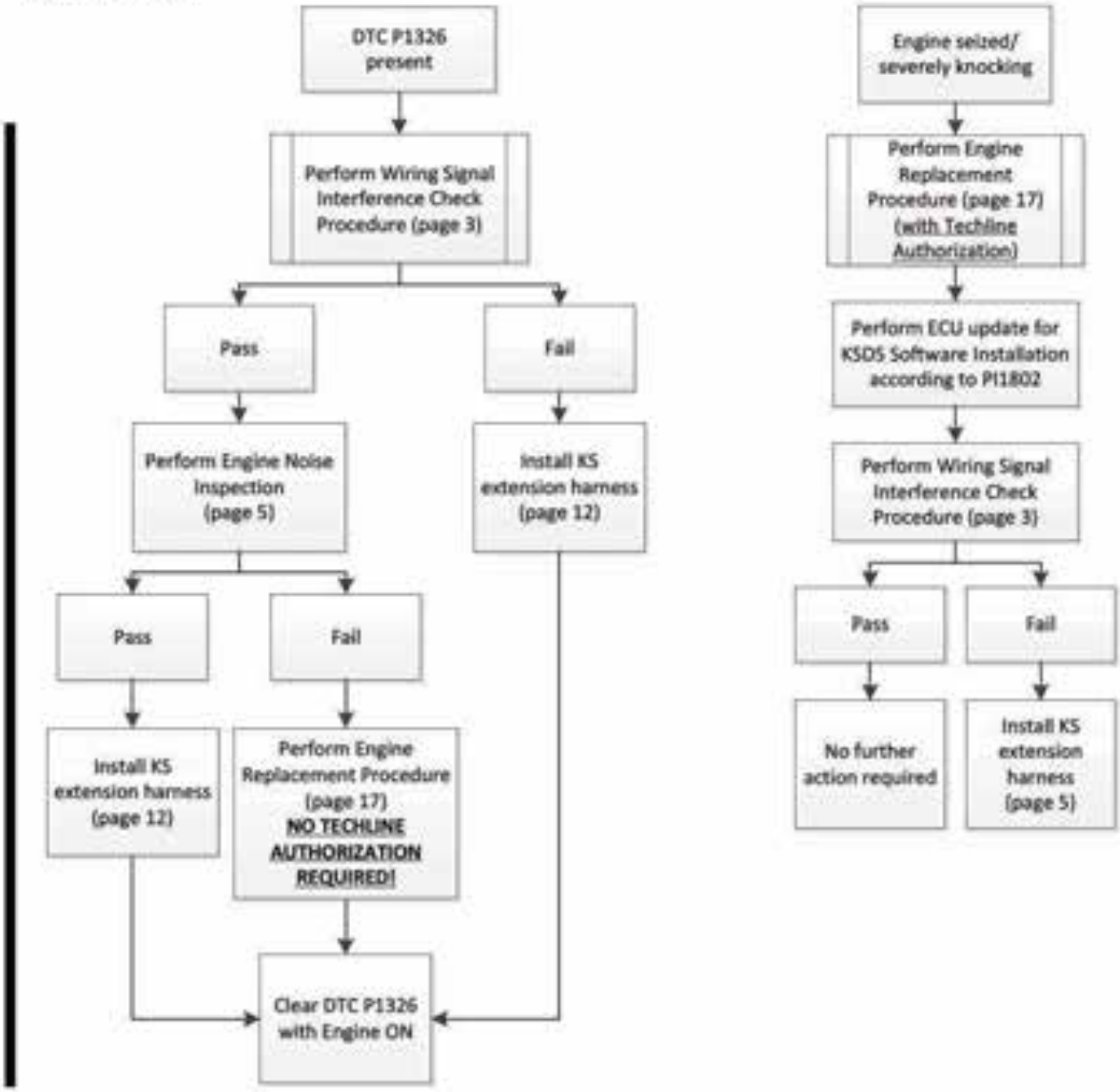
To ensure complete customer satisfaction, always remember to refer to WebDCS Warranty Coverage (validation) Inquiry Screen (Service → Warranty Coverage → Warranty Coverage Inquiry) for a list of any additional campaigns that may need to be performed on the vehicle before returning it to the customer.

File Under: <Product Improvement>

Circulate To: ☒ General Manager ☒ Service Manager ☒ Parts Manager ☒ Service Advisors ☒ Technicians ☒ Body Shop Manager ☐ Fleet Repair

SUBJECT: ENGINE REPLACEMENT INSTRUCTIONS FOR DTC P1326 (PI1802W/X)

Flow Chart:



Note: **If any concerns arise after completing the flow chart, open a Techline case online.**

Wiring Signal Interference Check Procedure:

1. Using the KDS **(connected to the internet)**, perform a Fault Code Search and confirm DTC P1326 is present.
   - If P1326 is present, proceed to the next step to perform the wiring signal interference check.
   - If the engine is seized or severely knocking, proceed to the engine replacement procedure on page 17 (with Techline authorization per Flow Chart).



2. Start/warm up the engine and ensure **ENGINE OIL** is at operating temperature (176°F).



3. From the KDS Home Screen, select S/W Management.



4. Select Engine Control → Wiring Signal Interference Check.



5. Ensure the engine is on and at idle and **ENGINE OIL** temperature is at 176°F degrees or higher. Select OK to proceed.



5b. Select OK to proceed.

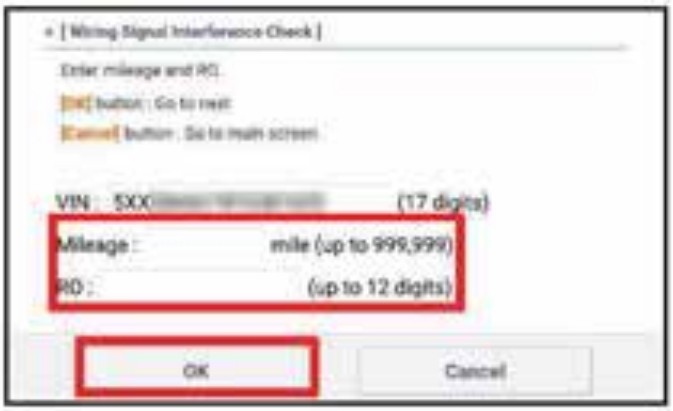
NOTE: This test should only be performed if Knock Sensor Detection System - ECU Logic Improvement (PI1802) has previously been completed.



5c. If the conditions are not met, a pop-up as shown will be displayed.



6. Enter vehicle mileage and RO number (VIN is automatically populated).



7. Wiring Signal Interference Check test will begin and take about three (3) minutes to complete. **NOTE**: Do not push on the accelerator pedal.



- If the result is "OK", proceed to the Engine Noise Inspection procedure on page 5.

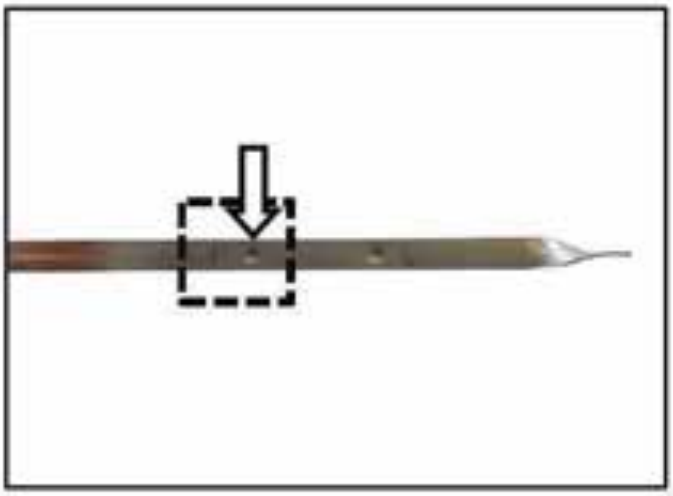


- If the result is "NOT OK", turn the engine off and proceed to **step 2** of the Knock Sensor (KS) Extension Harness Installation procedure on page 12.



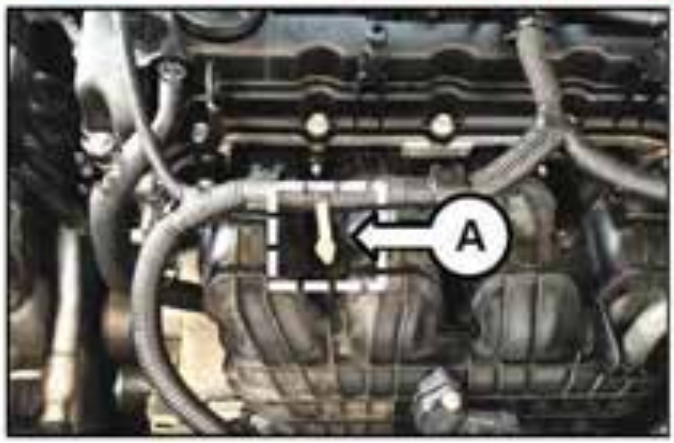
Engine Noise Inspection Procedure:

1. Prior to inspection, ensure the KDS is fully charged and is connected to the internet every day to ensure the latest update is received and installed.
   - Engine oil level should be at the "FULL" mark. Top off with 5W-30 if required.
   - Test requires the engine to be in satisfactory running condition and able to idle normally.
   - Engine coolant temperature should be above minimum test temperature: 185°F (85°C).



If the engine's running condition is poor due to issues unrelated to a connecting rod knocking noise (faulty sensors, intake/exhaust manifold leak, catalytic converter, etc.), diagnose and repair prior to performing this inspection procedure. If the engine cannot be tested or has other major concerns, **see Warranty Claim Authorization information on page 40**.

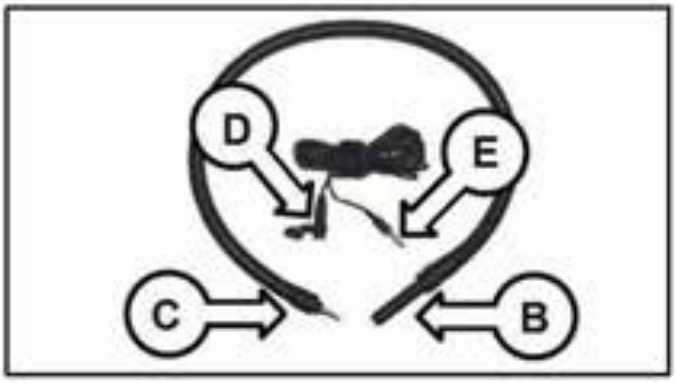
2. With the engine off, remove the dipstick (A).



*** NOTICE**

Engine cover removed in images for demonstration-only purposes.

3. Insert the engine noise tester SST adapter (B) into the dipstick tube then start and idle the engine.



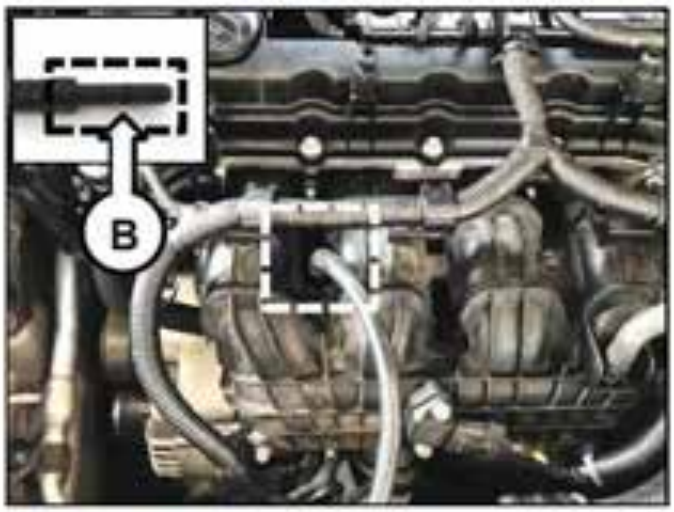
*** NOTICE**

To avoid false readings, ensure the adapter (B) is properly inserted into the dipstick tube and that the tube is not in contact with the intake manifold.

If the dipstick tube is not centered and is close to or touching the manifold, carefully adjust (bend) and center the dipstick tube with a pry bar.

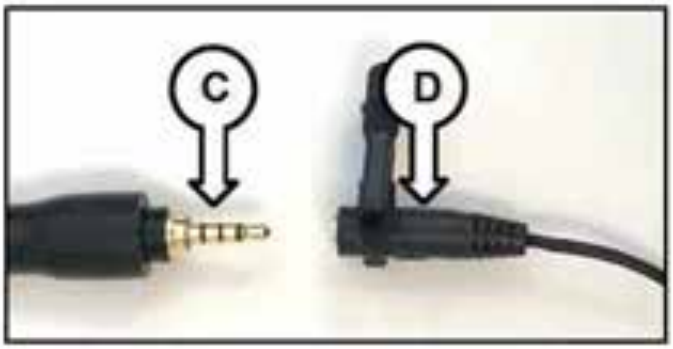


Not Centered Centered



Click here for a video tutorial of the Inspection Procedure.

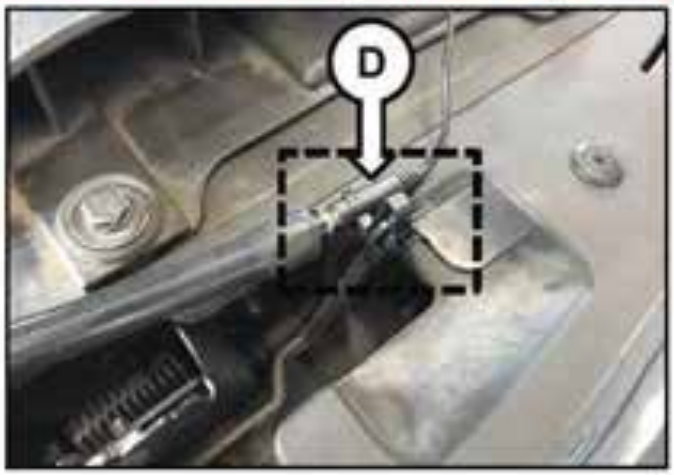
4. Connect the 3.5 mm male end of the engine noise tester SST (C) to the 3.5 mm female end of the extension cable (D).



5. Attach the SST clip of the extension cable (D) to the hood latch.

★ NOTICE

Make sure to route the extension cable away from moving parts (pulleys, fan, and belts and be careful not to get it pinched between door and body or window, etc.).



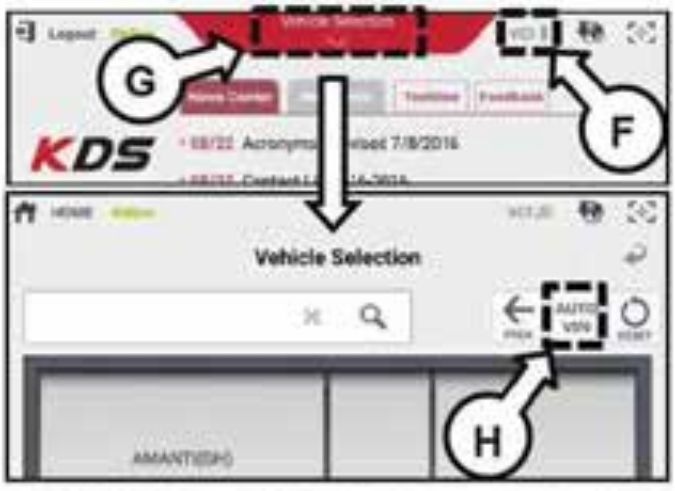
6. Connect the 3.5 mm male end (E) of the extension cable to the headphone port located at the upper left corner (KDS version 1.0) or at the bottom of the tablet (KDS version 2.0).



7. Connect the VCI-II to the OBD-II connector and launch the KDS application from the KDS tablet home page.



8. Confirm communication with VCI (F) and then configure the vehicle (G) using the **AUTO VIN** (H) feature.



9. Swipe up the "More" tab from the lower screen of the KDS and select "Special Inspection".



★ NOTICE

If the vehicle model/model year does not qualify for this campaign, a message will pop up; if so, verify that the vehicle is included in the list of affected VINs.

10. Complete the vehicle information form on the screen:

    - Mileage
    - RO number
    - Select "Verify" to verify the VIN

    Note: VIN must be verified with the "Verify" function in order to proceed to the next step.

    Select "Next" to continue.



11. Confirm that all of the pre-inspection items listed on the screen are true:

    - Engine Oil Level – Normal
    - Coolant Level – Normal
    - Engine Cover – Installed
    - Driver Window – Opened
    - A/C & Blower Motor – OFF
    - Audio & All Accessories – OFF
    - Engine – Warm up (185°F or higher)
    - Insert "A" into dipstick tube
    - Connect "B" part at tablet headphone port

    Select "Next" after checking items mentioned above.



12. The program will automatically check the engine sensors' data. Select the "Next" button if all the conditions are satisfied.
    - Engine Coolant Temperature: 185°F or higher
    - A/C Request to ECU: OFF

    Note: If the test item result is "NOT GOOD", correct the condition then select "Refresh Data".



13. Follow the instructions on the screen then select "Next".



14. Prior to the initial measurement, the program will automatically check if the engine noise tester is installed and operating correctly at engine idle and perform an internal diagnosis.

    Begin the second part of the engine noise tester check by selecting "Start".



*** NOTICE**

If the measured noise level is too low or abnormally high, an engine noise tester inspection message will pop up. Check and correct as necessary and start again.

15. With the vehicle in Park (A/T) / Neutral (M/T), increase and maintain the engine speed at 2,000-3,000 RPM for thirty (30) seconds.

    The program will automatically proceed to the next step when the engine noise tester is ready.



*** NOTICE**

Once the RPM is in the specified range, the time count (green bars) will be initialized.

16. With the vehicle in Park (A/T) / Neutral (M/T), begin the "2000rpm Test" by increasing and maintaining engine speed between 1,900-2,100 (2.4L) or 1,900-2,200 (2.0T) RPM until all three (3) measurements are complete.



17. When the "2000rpm Test" is complete, release the accelerator pedal so that engine maintains idle state for the "Idle Test".

18. The "Idle Test" will automatically begin. Keep the engine at idle and wait until all three (3) measurements are complete.



19. After the completion of the engine noise inspection, the KDS will automatically generate/display a "PASS" or "NO PASS" result.

    - If the inspection result is "PASS", proceed to the KS Extension Harness Installation procedure on page 12.
    - If the inspection result is "NO PASS," proceed to the engine replacement procedure on page 17.
    - If the inspection result is "RETEST" with an error code, see Adapter Error Code chart in Appendix 4 on page 45 for corrective action then repeat the inspection procedure starting from step 9.



20. Select "Finish" to complete the engine noise inspection. Ensure the KDS is connected to the internet and the "Special Inspection" KDS application is open to automatically submit the results to the Kia Server. To save and/or print the results as PDF, select "Print".

    If the KDS is not connected to the internet, up to five (5) results will stay pending in the queue until the KDS is connected to the internet with the "Special Inspection" application open.

    Note: The five (5) pending results must be submitted before a sixth (6th) test can be conducted.



21. Disconnect the engine noise tester from the KDS and carefully remove the adapter (B) from the dipstick tube by grasping the engine noise tester adapter.

KS Extension Harness Installation Procedure:

NOTE: Photos below are from a 15MY Optima (QF). Components and their location may vary in different models.

1. Inspect the ECU harness (A) and verify if the Knock Sensor wiring extension harness (B) has previously been installed.

   NOTE: To identify the extension harness (B), look for an external harness (B) which should be cable-tied to the existing wiring harness (A) leading by the intake manifold (C) to the knock sensor (D), as shown.

   - If the extension harness (B) has been installed, open a Techline case online.
   - If the extension harness (B) has not been installed, proceed to the next step.

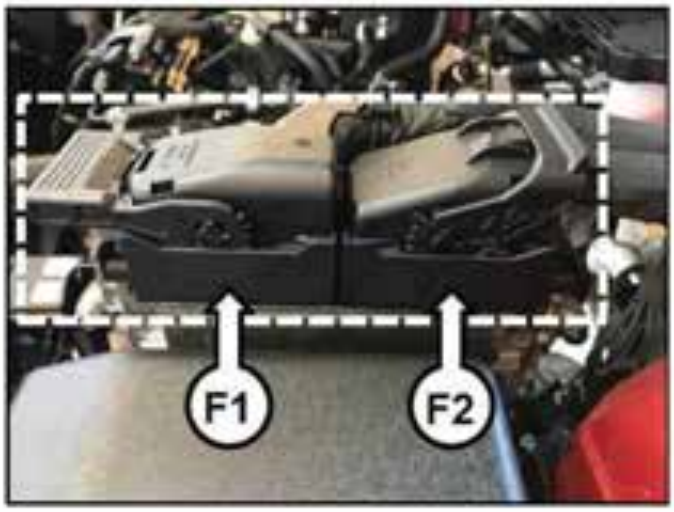




2. Remove the air cleaner and duct assembly (E).



3. Disconnect the ECU connector* (figure F1 **or** F2) (*see IMPORTANT note below).



*** IMPORTANT**

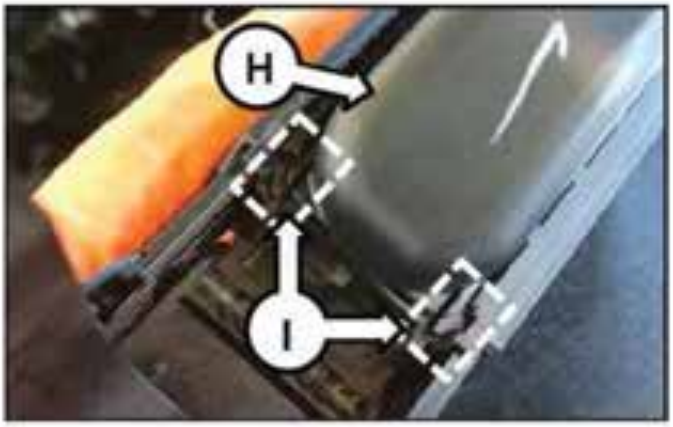
Location of the ECU connector may vary from model to model. Refer to the table on page 13 for the ECU connector number and the applicable ETM Manual on KGIS for the location of the ECU connector.

MY	Model	Engine	ECU Connector Number
2014-2015	TF	2.4	C200-B
2015	QF	2.4	C200-B
		2.0T	C100-B
2016-2018	JF/JFa	2.4	C200-A
	JFa	2.0T	C100-A
2015	XMa	2.4	C300-B
2016-2018	UMa	2.4	C100-A
		2.0T	C200-A
2014-2016	SL	2.4	CHGG-BG
		2.0T	CHTG-BG
2017-2018	QL	2.4	C100-A
		2.0T	C200-A

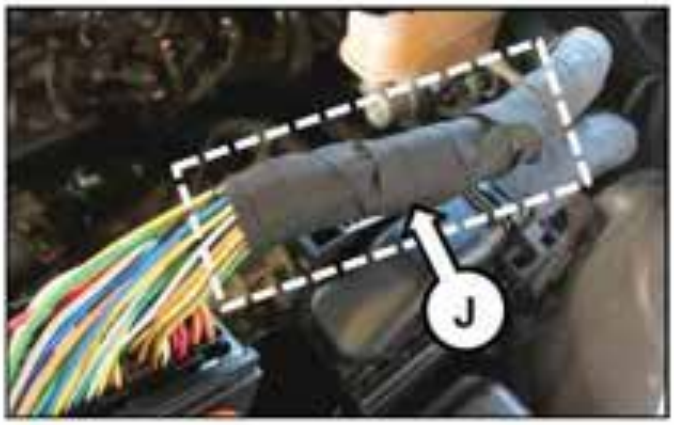
4. Cut the existing cable-tie (G) from the connector.



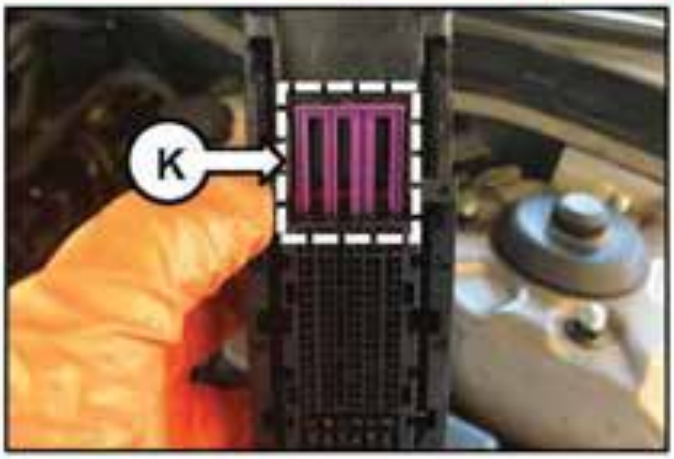
5. Remove the ECU connector cover (H) by carefully unclipping the two (2) tabs (I) and sliding the cover (H) towards the tabs (I).



6. Carefully remove the electrical tape (J) to expose the harness wires.



7. Remove the pin retainer (K).

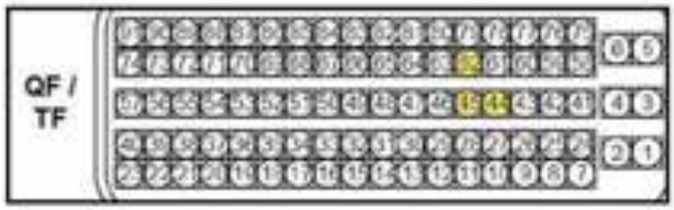


8. Locate the three (3) knock sensor circuit terminals from the ECU connector. Refer to the "Schematic Diagrams → Engine Electrical System → Engine Control System → Schematic Diagrams" chapter of the applicable ETM on KGIS.

QF, TF, XMa, and SL	
Pin	Wire
44	Knock Sensor Shielded Ground
45	Knock Sensor Ground
62	Knock Sensor Interface (Signal)

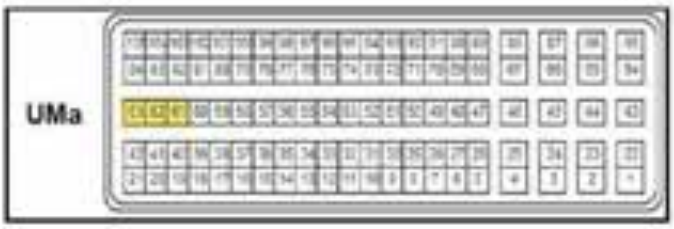
UMa, JF, JFa, and QL	
Pin	Wire
61	Knock Sensor Shielded Ground
62	Knock Sensor Ground
63	Knock Sensor Interface (Signal)

Click here to see a video of terminal removal.









*** IMPORTANT**

Location of the ECU connector may vary from model to model. Refer to the table on page 6 for the ECU connector number and the applicable ETM Manual on KGIS for the location of the ECU connector.

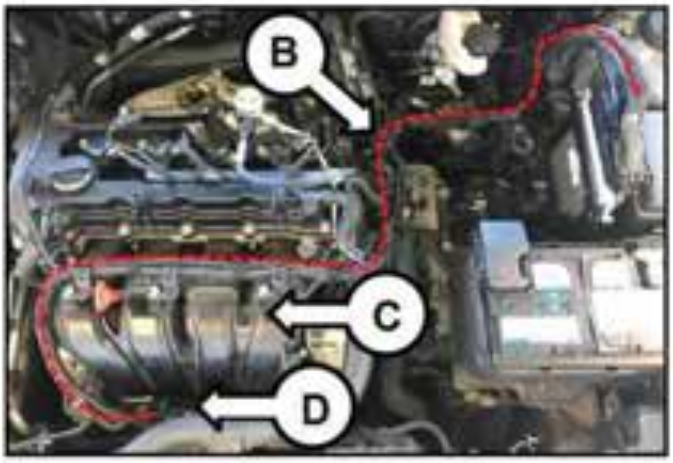
9. Remove the three (3) terminals **one at a time** and insert the new terminals of the extension harness into the ECU connector (F). Reinstall pin retainer (K) and reassemble the connector (F).



QF, TF, XMa, and SL	
Pin	**Extension Wire Color**
44	Blue
45	Black
62	Red
UMa, JF, JFa, and QL	
Pin	**Extension Wire Color**
61	Blue
62	Black
63	Red

NOTE: Be sure to note the rotational position of the terminals during removal. They are directional and need to be reinstalled in the same "clock" position.

10. Route the extension harness (B) along the existing harness (A) leading by the intake manifold (C) to the knock sensor (D), **exactly** as shown.



*** IMPORTANT**

The harness (B) must be routed exactly as shown to prevent related DTCs.

*** IMPORTANT**

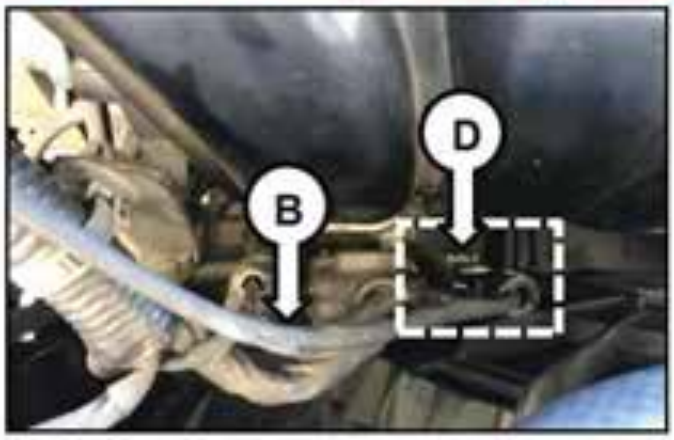
The harness (B) must be routed above and secured to the harness protector (L1) and UNDER the Breather Hose (L2) and Camshaft Position Sensor (L3).





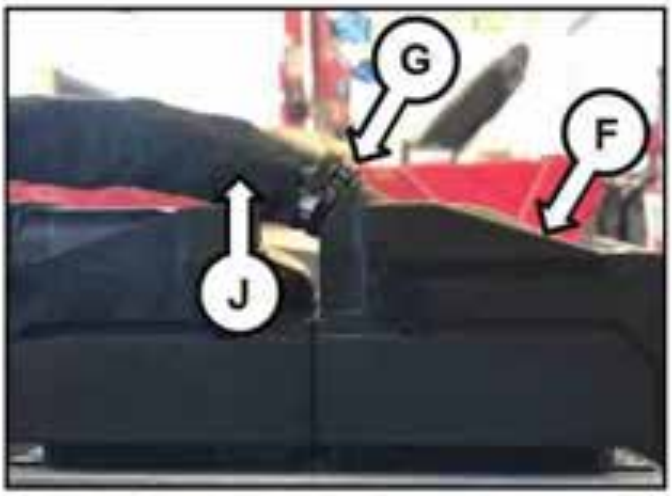


11. Connect the extension harness (B) to the knock sensor (D).

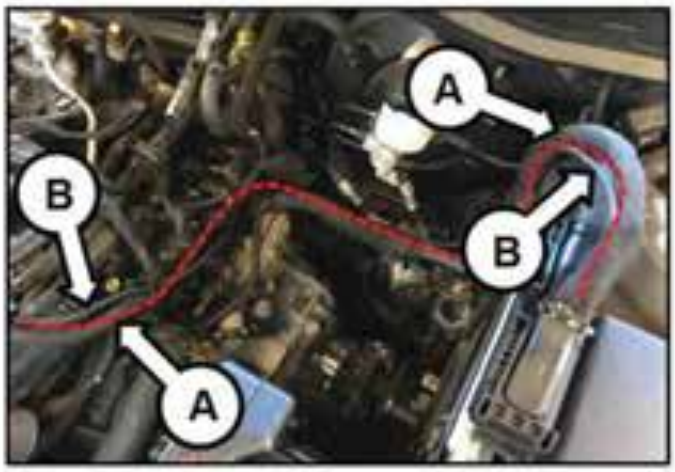


12. Cut off and discard the three (3) old knock sensor circuit terminals and the old knock sensor connector and secure the remaining wires to the new extension harness using the supplied electrical tape. **NOTE**: Complete removal of the old knock sensor wires is not necessary. Only remove the old terminals and connector.

13. Secure the extension harness at the connector (F) by replacing the cable-tie (G) removed in step 4 with a new supplied cable-tie and the electrical tape (J) removed in step 6 with new supplied electrical tape.



14. Secure the extension harness (B) to the existing harness (A) using the supplied cable-ties. Tuck and secure any excess wiring of the extension harness near the ECU with cable-tie.



15. Reinstall all removed components in the reverse order of removal.

16. Erase the P1326 DTC with the KDS and start the engine to confirm proper operation.

SUBJECT: ENGINE REPLACEMENT INSTRUCTIONS FOR DTC P1326 (PI1802W/X)

Engine Replacement Procedure:

1. Remove the engine assembly by referring to the "Engine And Transmission (Transaxle) Assembly → Engine And Transmission (Transaxle) Assembly → Repair procedures" chapter in the applicable Shop Manual on KGIS.

   Refer to TSB ENG190 for information regarding engine replacement practices.



2. After removal of the engine from the vehicle, remove all components that will need to be transferred by referring to the applicable Shop Manual on KGIS.

3. Place the new engine block on an engine stand.

4. Install all removed components from the old engine block onto the new engine block utilizing all parts from Service Kit I and II. Be advised of notes below.

Tightening torque for Knock Sensor:
13.7 – 17.4 lb.ft (18.6 – 23.5 N.m, 1.9 – 2.4 kgf.m)

Notes:

High Pressure Pump & Roller Tappet:

- Refer to TSB ENG083 for special attention and handling procedures of GDI-specific components.
- When installing the high pressure pump and roller tappet onto the new engine, apply engine oil to the roller tappet, and O-rings of the high pressure pump.



Tightening torques of pump bolts:
9.4 – 10.9 lb.ft (12.8 – 14.7 N.m, 1.3 – 1.5 kgf.m)

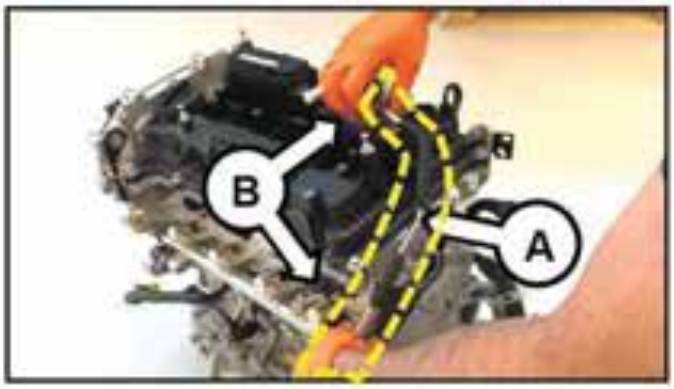
Tightening torques of pipe flare nut:
19.5 – 23.9 lb.ft (26.5 – 32.4 N.m, 2.7 – 3.3 kgf.m)

★ NOTICE

Refer to TSB ENG083 for gasoline direct injection (GDI) specific information, including related warnings and cautions for handling high fuel pressure system components.

High Pressure Fuel Pipe:

1. Properly position the new fuel pipe (A) and then hand-tighten both flare nuts (B).



2. Install the pipe retaining bracket and bolt (C) and torque to specifications.

★ NOTICE

If the bracket and bolt are missing, order and install a new bracket and bolt.

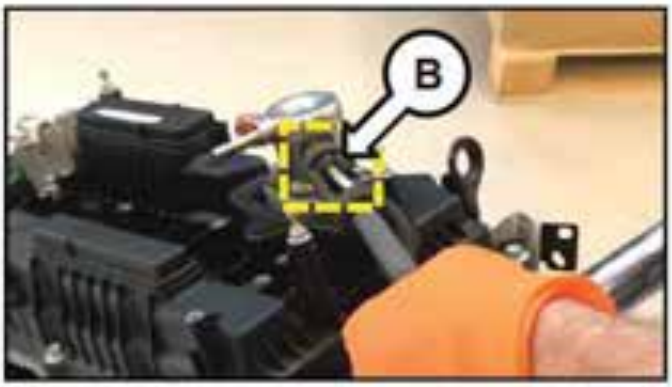
Tightening torque (bracket bolt):
5.8 – 8.7 lb.ft (7.8 –11.8 N.m, 0.8 – 1.2 kgf.m)



3. Using a click-type/electronic torque wrench and SST 09314-3Q100, torque both flare nuts (B) to specifications.

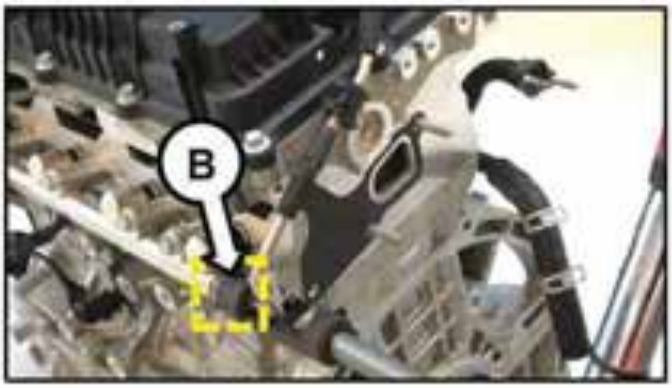
Tightening torque (flare nuts):
19.5 – 23.9 lb.ft (26.5 – 32.4 N.m, 2.7 – 3.3 kgf.m)

Click here to see a video tutorial of high pressure fuel pipe install (includes high pressure pump install).



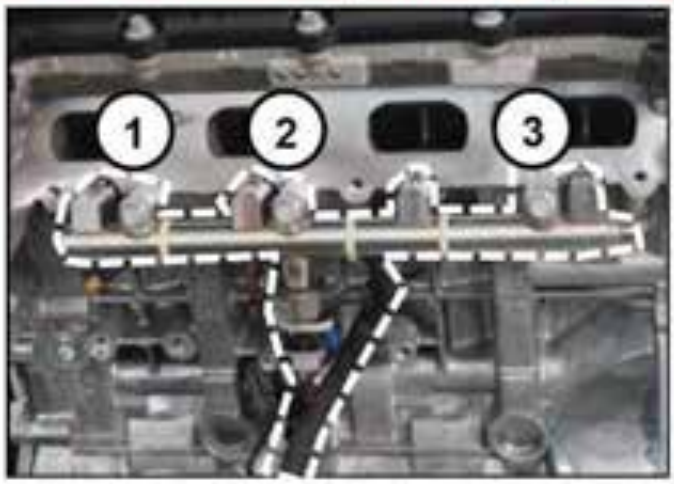
★ IMPORTANT

The high pressure fuel pipe bracket and bolt must be installed and properly torqued prior to torqueing the high pressure fuel pipe flare nuts.



Delivery Pipe:

- Refer to TSB ENG083 for special attention and handling procedures of GDI-specific components.
- Prior to installing the delivery pipe, be sure to replace all of the injector O-rings and injector retainers.
- Prior to installing the delivery pipe, apply engine oil to the injector O-rings.
- When installing the delivery pipe, use caution not to damage the tip of the injector.
- Be sure to replace the delivery pipe retaining bolts and torque them in the sequence shown.



Tightening torque of bolts:
13.7 – 17.4 lb.ft (18.6 – 23.5 N.m, 1.9 – 2.4 kgf.m)

*** NOTICE**

Combustion seals must be compressed after installation and before attempting to install into the cylinder head. Use SST 09353 2B000 (refer to TSB ENG083).

Dipstick Tube & Dipstick:

- Prior to installing the new tube, lubricate the o-ring located at the bottom of the tube with engine oil.
- Install the red dipstick included in Service Kit I.

Tightening torque of bolt:
5.8 – 8.7 lb.ft (7.8 – 11.8 N.m, 0.8 - 1.2 kgf.m)



Intake Manifold:

- Prior to installation, replace the intake manifold gaskets.
- Torque bolts in the sequence shown.

Tightening torque of bolts:
13.7 – 17.4 lb.ft (18.6 – 23.5 N.m, 1.9 – 2.4 kgf.m)

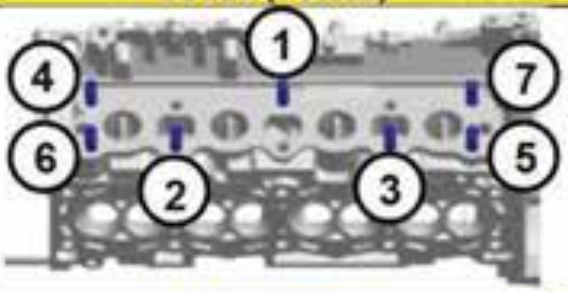


Exhaust Manifold:

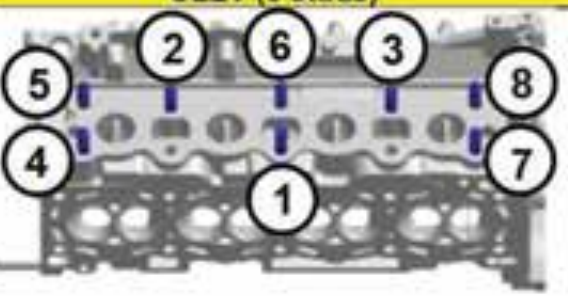
- All engines supplied under this Product Improvement Campaign have the exhaust manifold studs configured for SULEV engines.
- Using the pictures to the right, check the exhaust manifold stud location and quantity. Relocate as required for ULEV engines and obtain one (1) extra from the removed engine.
- Prior to installation, replace the exhaust manifold gasket and front muffler gasket.
- Torque nuts in the sequence shown.

Tightening torque of nuts:
36.2 – 39.7 lb.ft (49.0 – 53.9 N.m, 5.0 – 5.5 kgf.m)

SULEV (7 studs)



ULEV (8 studs)



***For 15MY Sorento (XMa) vehicles <u>only</u>: check the underhood emissions label and record whether the label references ULEV or SULEV. This information is needed to select/order the correct replacement engine.**


KIA MOTORS CORPORATION
VEHICLE EMISSION CONTROL INFORMATION

Conforms to regulations : 2015 MY

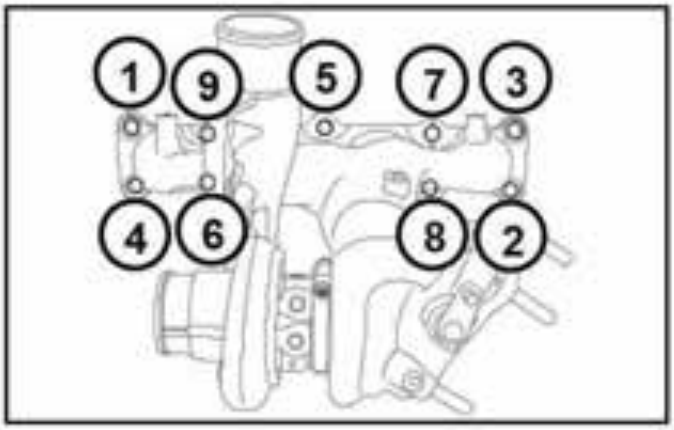
U.S.EPA : T2B5 LDV OBD : CA II Fuel : Gasoline

California ULEV PC OBD : CA II Fuel : Gasoline

No adjustments needed. A402

- <u>On Turbo engines</u>, replace the turbocharger oil feed line and gaskets.

Tightening torque of oil feed line bolt:
8.7 – 13.0 lb.ft (11.8 – 17.7 N.m, 1.2 – 1.8 kgf.m)
Tightening torque of oil feed line nuts:
5.8 – 8.7 lb.ft (7.8 – 11.8 N.m, 0.8 – 1.2 kgf.m)
Tightening torque of oil drain line nuts and bolts:
5.8 – 8.7 lb.ft (7.8 – 11.8 N.m, 0.8 – 1.2 kgf.m)



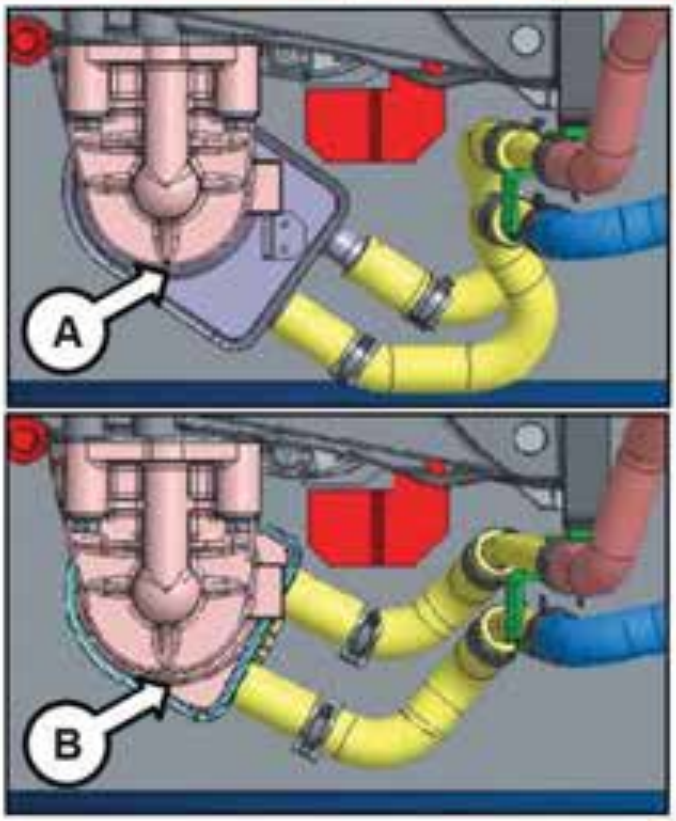
- Torque exhaust manifold nuts in the sequence shown.

Tightening torque of nuts:
36.2 – 39.7 lb.ft (49.0 – 53.9 N.m, 5.0 – 5.5 kgf.m)

Oil Cooler Tube Assembly:

New engines may be supplied with a different oil cooler. Use steps below to determine the need for a replacement oil cooler tube assembly.

- If the new engine's (bigger) oil cooler (A) does not match the old engine's (smaller) oil cooler (B), replace the oil cooler tube assembly with the improved part. See parts table on page 24.
- If the new engine's (bigger) oil cooler (A) matches the old engine's (bigger) oil cooler (A), reuse the old engine's oil cooler tube assembly.
- If the new engine's (smaller) oil cooler (B) matches the old engine's (smaller) oil cooler (B), reuse the old engine's oil cooler tube assembly.



Drive Plate Bolts:

- Replace all seven (7) drive plate (AT) bolts.

Tightening torque of nuts:
86.8 – 93.9 lb.ft (117.7 – 125.5 N.m, 12.0 – 13.0 kgf.m)



Drive Plate Bolt (A/T)

Torque Converter

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


Not Fully Inserted


Fully Inserted

5. Reinstall the assembled engine and transmission/transaxle into the vehicle.

   Be sure to:

   - Fill crankcase with 5W-30 oil (~5.8 quarts).
   - Fill and bleed the cooling system with 50/50 coolant or mixture appropriate for area.
   - Pressurize the fuel system before starting the vehicle.
   - Reset engine adaptive values and perform steering angle sensor calibration.

   Refer to TSB ENG190 for information regarding engine replacement practices.

6. Verify proper operation of the vehicle with road test, and **with the engine ON (running), erase any stored DTCs** (e.g., EPS, ESC, and TPMS) that may have been set by this procedure. Verify no leaks exist and ensure engine oil and coolant are at their proper level.

   If any DTCs are still active, follow any related diagnosis and repair as needed.

SUBJECT: ENGINE REPLACEMENT INSTRUCTIONS FOR DTC P1326 (PI1802W/X)

AFFECTED VEHICLE RANGE:

Model	Production Date Range
14MY Optima (TF)	August 29, 2013 through April 25, 2014
15-18MY Optima (TF/QF/JF/JFa)	April 16, 2014 through July 11, 2018
14-18MY Sportage (SL/QL)	September 30, 2013 through April 5, 2018
15-18MY Sorento (XMa/UMa)	January 3, 2014 through March 7, 2018

REQUIRED TOOL:

Tool Name	Tool Part No.	Figure	Comments
Torque Wrench Socket	09314 3Q100		Refer to TSB ENG063 for detailed usage instructions
Injector Combustion Seal Ring Installer	09353 2B000		
Pin Tool	91400 00000QQK		Auto-shipped to Dealers in 10/2018. Replacements can be ordered through Mobis Parts America.
Click-Type or Electronic Torque Wrench	N/A		Locally Sourced
Engine Noise Tester SST	GIT1XTDCP005		Auto-shipped to Dealers in June 2017 for SC147. For replacements, contact Snap-On Business Solutions at (888) 542-1011.

REQUIRED PARTS:

Part Name	MY	Model	Part Number		Figure
			2.4L GDI	2.0L T-GDI	
Engine Long Block	14-15	TF	21101 2GK06QQKR	-	
	14-16	SL	21101 2GK36QQKR	21101 2GK37QQKR	
	15	QF	21101 2GK06QQKR	21101 2GK08QQKR	
		XMa ULEV & SULEV	21101 2GK11QQKR	-	
	17-18	QL	21101 2GK35QQKR	21101 2GK39QQKR	
	16-17	UMa	21101 2GK31QQKR	21101 2GK32QQKR	
	18		21101 2GK33QQKR		
	16-18	JF, JFa	21101 2GK34QQKR	21101 2GK32QQKR	

Models	Part Name	Engine	Part Number	Figure
TF, SL, QF, XMa	Service Kit I	2.4L GDI	21111 2GK50QQK	
		2.0L T-GDI	21111 2GK60QQK	

SUBJECT: ENGINE REPLACEMENT INSTRUCTIONS FOR DTC P1326 (PI1802W/X)

Models	Part Name	Engine	Part Number	Figure
UMa, QL, JF, JFa	Service Kit I	2.4L GDI	21111 2GK51QQK	
		2.0L T-GDI	21111 2GK52QQK	
TF, SL, QF, XMa	Service Kit II	2.4L GDI and 2.0L T-GDI	21111 2GK70QQK	
UMa, QL, JF, JFa		2.4L GDI	21111 2GK71QQK	
		2.0L T-GDI	21111 2GK72QQK	
TF, SL, QF, XMa	KS Extension Harness	2.4L GDI and 2.0L T-GDI	*91400 2T100QQK	
UMa, QL, JF, JFa		2.4L GDI and 2.0L T-GDI	91400 2T010QQK	
All	Drive Plate Bolts	2.4L GDI and 2.0L T-GDI	23311 25050	
	Oil Cooler Tube Assembly (replacement is conditional, refer to page 21)	2.4L GDI	25470 2G050QQK	
		2.0L T-GDI	25470 2G650QQK	

***NOTE: Old part number 91400 2T000QQK has been superseded by new part number 91400 2T100QQK.**

SUBJECT: ENGINE REPLACEMENT INSTRUCTIONS FOR DTC P1326 (PI1802W/X)

WARRANTY INFORMATION (PI1802**W1**, MIL ON WITH P1326):

N Code: N99 C Code: C99

Model	Claim Type	Causal P/N	Qty.	Repair Description	Labor Op Code	Op Time	Replacement P/N	Qty.
Scr. (XMa) 2.4L	R	21020 2G010	0	(PI1802**W1**) 2.4L GDI 2WD MIL ON with P1326, KSDS Wire Harness Inspection Pass, Engine Noise Inspection Pass, & KSDS Extension Harness Install	180A12R4	1.1 M/H	*91400 2T100QQK	1
				(PI1802**W1**) 2.4L GDI 2WD MIL ON with P1326, KSDS Wire Harness Inspection Pass, Engine Noise Inspection Fail, & Engine Replacement	180A12R0	8.7 M/H	21111 2GK50QQKR	1
							21111 2GK70QQKR	1
							23311 25050	7
							(ULEV or SULEV) 21101 2GK11QQKRR	1
				(PI1802**W1**) 2.4L GDI 2WD MIL ON with P1326, KSDS Wire Harness Inspection Fail, KSDS Extension Harness Install	180A12R2	0.8 M/H	*91400 2T100QQK	1
				(PI1802**W1**) 2.4L GDI AWD MIL ON with P1326, KSDS Wire Harness Inspection Pass, Engine Noise Inspection Pass, & KSDS Extension Harness Install	180A12R5	1.1 M/H	*91400 2T100QQK	1
				(PI1802**W1**) 2.4L GDI AWD MIL ON with P1326, KSDS Wire Harness Inspection Pass, Engine Noise Inspection Fail, & Engine Replacement	180A12R1	8.9 M/H	21111 2GK50QQK	1
							21111 2GK70QQK	1
							23311 25050	7
							(ULEV or SULEV) 21101 2GK11QQKR	1
				(PI1802**W1**) 2.4L GDI AWD MIL ON with P1326, KSDS Wire Harness Inspection Fail, KSDS Extension Harness Install	180A12R3	0.8 M/H	*91400 2T100QQK	1

***NOTE: Old part number 91400 2T000QQK has been superseded by new part number 91400 2T100QQK.**

SUBJECT: ENGINE REPLACEMENT INSTRUCTIONS FOR DTC P1326 (PI1802W/X)

Model	Claim Type	Causal P/N	Qty.	Repair Description	Labor Op Code	Op Time	Replacement P/N	Qty.
Opt. (QF) 2.4L	R	23060 2G400	0	(PI1802W1) 2.4L GDI MIL ON with P1326, KSDS Wire Harness Inspection Pass, Engine Noise Inspection Pass, & KSDS Extension Harness Install	180A16R5	1.1 M/H	*91400 2T100QQK	1
				(PI1802W1) 2.4L GDI MIL ON with P1326, KSDS Wire Harness Inspection Pass, Engine Noise Inspection Fail, & Engine Replacement	180A16R1	8.7 M/H	21111 2GK50QQK	1
							21111 2GK70QQK	1
							23311 25050	7
							21101 2GK06QQKR	1
				(PI1802W1) 2.4L GDI MIL ON with P1326, KSDS Wire Harness Inspection Fail, KSDS Extension Harness Install	180A16R3	0.8 M/H	*91400 2T100QQK	1
Opt. (QF) 2.0L T	R	23060 2G400	0	(PI1802W1) 2.0L T-GDI MIL ON with P1326, KSDS Wire Harness Inspection Pass, Engine Noise Inspection Pass, & KSDS Extension Harness Install	180A16R4	1.1 M/H	*91400 2T100QQK	1
				(PI1802W1) 2.0L T-GDI MIL ON with P1326, KSDS Wire Harness Inspection Pass, Engine Noise Inspection Fail, & Engine Replacement	180A16R0	8.9 M/H	21111 2GK60QQK	1
							21111 2GK70QQK	1
							23311 25050	7
							21101 2GK06QQKR	1
				(PI1802W1) 2.0L T-GDI MIL ON with P1326, KSDS Wire Harness Inspection Fail, KSDS Extension Harness Install	180A16R2	0.8 M/H	*91400 2T100QQK	1
Opt. (TF) 2.4L	R	23060 2G400	0	(PI1802W1) 2.4L GDI MIL ON with P1326, KSDS Wire Harness Inspection Pass, Engine Noise Inspection Pass, & KSDS Extension Harness Install	180111RK	1.1 M/H	*91400 2T100QQK	1
				(PI1802W1) 2.4L GDI MIL ON with P1326, KSDS Wire Harness Inspection Pass, Engine Noise Inspection Fail, & Engine Replacement	180111R0	8.7 M/H	21111 2GK50QQK	1
							21111 2GK70QQK	1
							23311 25050	7
							21101 2GK06QQKR	1
				(PI1802W1) 2.4L GDI MIL ON with P1326, KSDS Wire Harness Inspection Fail, KSDS Extension Harness Install	180111R5	0.8 M/H	*91400 2T100QQK	1

***NOTE: Old part number 91400 2T000QQK has been superseded by new part number 91400 2T100QQK.**

SUBJECT: ENGINE REPLACEMENT INSTRUCTIONS FOR DTC P1326 (PI1802W/X)

Model	Claim Type	Causal P/N	Qty.	Repair Description	Labor Op Code	Op Time	Replacement P/N	Qty.
Spo. (SL) 2.4L	R	23060 2G400	0	(PI1802W1) 2.4L GDI 2WD MIL ON with P1326, KSDS Wire Harness Inspection Pass, Engine Noise Inspection Pass, & KSDS Extension Harness Install	180112RK	1.2 M/H	*91400 2T100QQK	1
				(PI1802W1) 2.4L GDI 2WD MIL ON with P1326, KSDS Wire Harness Inspection Pass, Engine Noise Inspection Fail, & Engine Replacement	180112R0	8.0 M/H	21111 2GK50QQK	1
							21111 2GK70QQK	1
							23311 25050	7
							21101 2GK36QQKR	1
				(PI1802W1) 2.4L GDI 2WD MIL ON with P1326, KSDS Wire Harness Inspection Fail, KSDS Extension Harness Install	180112R5	0.9 M/H	*91400 2T100QQK	1
				(PI1802W1) 2.4L GDI AWD MIL ON with P1326, KSDS Wire Harness Inspection Pass, Engine Noise Inspection Pass, & KSDS Extension Harness Install	180112RM	1.2 M/H	*91400 2T100QQK	1
				(PI1802W1) 2.4L GDI AWD MIL ON with P1326, KSDS Wire Harness Inspection Pass, Engine Noise Inspection Fail, & Engine Replacement	180112R2	8.4 M/H	21111 2GK50QQK	1
							21111 2GK70QQK	1
							23311 25050	7
							21101 2GK36QQKR	1
				(PI1802W1) 2.4L GDI AWD MIL ON with P1326, KSDS Wire Harness Inspection Fail, KSDS Extension Harness Install	180112R7	0.9 M/H	*91400 2T100QQK	1

***NOTE: Old part number 91400 2T000QQK has been superseded by new part number 91400 2T100QQK.**

SUBJECT: ENGINE REPLACEMENT INSTRUCTIONS FOR DTC P1326 (PI1802W/X)

Model	Claim Type	Causal P/N	Qty.	Repair Description	Labor Op Code	Op Time	Replacement P/N	Qty.
Spo. (SL) 2.0L T	R	23060 2G400	0	(PI1802W1) 2.0L T-GDI 2WD MIL ON with P1326, KSDS Wire Harness Inspection Pass, Engine Noise Inspection Pass, & KSDS Extension Harness Install	180112RN	1.2 M/H	*91400 2T100QQK	1
				(PI1802W1) 2.0L T-GDI 2WD MIL ON with P1326, KSDS Wire Harness Inspection Pass, Engine Noise Inspection Fail, & Engine Replacement	180112R3	8.0 M/H	21111 2GK60QQK	1
							21111 2GK70QQK	1
							23311 25050	7
							21101 2GK37QQKR	1
				(PI1802W1) 2.0L T-GDI 2WD MIL ON with P1326, KSDS Wire Harness Inspection Fail, KSDS Extension Harness Install	180112R8	0.9 M/H	*91400 2T100QQK	1
				(PI1802W1) 2.0L T-GDI AWD MIL ON with P1326, KSDS Wire Harness Inspection Pass, Engine Noise Inspection Pass, & KSDS Extension Harness Install	180112RO	1.2 M/H	*91400 2T100QQK	1
				(PI1802W1) 2.0L T-GDI AWD MIL ON with P1326, KSDS Wire Harness Inspection Pass, Engine Noise Inspection Fail, & Engine Replacement	180112R4	8.4 M/H	21111 2GK60QQK	1
							21111 2GK70QQK	1
							23311 25050	7
							21101 2GK37QQKR	1
				(PI1802W1) 2.0L T-GDI AWD MIL ON with P1326, KSDS Wire Harness Inspection Fail, KSDS Extension Harness Install	180112R9	0.9 M/H	*91400 2T100QQK	1

***NOTE: Old part number 91400 2T000QQK has been superseded by new part number 91400 2T100QQK.**

SUBJECT: ENGINE REPLACEMENT INSTRUCTIONS FOR DTC P1326 (PI1802W/X)

Model	Claim Type	Causal P/N	Qty.	Repair Description	Labor Op Code	Op Time	Replacement P/N	Qty.
Sor. (UMa) 2.4L	R	23060 2G401	0	(PI1802**W1**) 2.4L GDI 2WD MIL ON with P1326, KSDS Wire Harness Inspection Pass, Engine Noise Inspection Pass, & KSDS Extension Harness Install	180A32RJ	1.1 M/H	91400 2T010QQK	1
				(PI1802**W1**) 2.4L GDI 2WD MIL ON with P1326, KSDS Wire Harness Inspection Pass, Engine Noise Inspection Fail, & Engine Replacement	180A32R0	8.7 M/H	21111 2GK51QQK	1
							21111 2GK71QQK	1
							23311 25050	7
							(16-17MY) 21101 2GK31QQKR	1
							(18MY) 21101 2GK33QQKR	
				(PI1802**W1**) 2.4L GDI 2WD MIL ON with P1326, KSDS Wire Harness Inspection Fail, KSDS Extension Harness Install	180A32R4	0.8 M/H	91400 2T010QQK	1
				(PI1802**W1**) 2.4L GDI AWD MIL ON with P1326, KSDS Wire Harness Inspection Pass, Engine Noise Inspection Pass, & KSDS Extension Harness Install	180A32RK	1.1 M/H	91400 2T010QQK	1
				(PI1802**W1**) 2.4L GDI AWD MIL ON with P1326, KSDS Wire Harness Inspection Pass, Engine Noise Inspection Fail, & Engine Replacement	180A32R1	9.0 M/H	21111 2GK51QQK	1
							21111 2GK71QQK	1
							23311 25050	7
							(16-17MY) 21101 2GK31QQKR	1
							(18MY) 21101 2GK33QQKR	
				(PI1802**W1**) 2.4L GDI AWD MIL ON with P1326, KSDS Wire Harness Inspection Fail, KSDS Extension Harness Install	180A32R5	0.8 M/H	91400 2T010QQK	1

SUBJECT: ENGINE REPLACEMENT INSTRUCTIONS FOR DTC P1326 (PI1802W/X)

Model	Claim Type	Causal P/N	Qty.	Repair Description	Labor Op Code	Op Time	Replacement P/N	Qty.
Sor. (UMa) 2.0L T	R	23060 2G401	0	(PI1802W1) 2.0L T-GDI 2WD MIL ON with P1326, KSDS Wire Harness Inspection Pass, Engine Noise Inspection Pass, & KSDS Extension Harness Install	180A32RL	1.1 M/H	91400 2T010QQK	1
				(PI1802W1) 2.0L T-GDI 2WD MIL ON with P1326, KSDS Wire Harness Inspection Pass, Engine Noise Inspection Fail, & Engine Replacement	180A32R2	8.7 M/H	21111 2GK52QQK	1
							21111 2GK72QQK	1
							23311 25050	7
							21101 2GK32QQKR	1
				(PI1802W1) 2.0L T-GDI 2WD MIL ON with P1326, KSDS Wire Harness Inspection Fail, KSDS Extension Harness Install	180A32R6	0.8 M/H	91400 2T010QQK	1
				(PI1802W1) 2.0L T-GDI AWD MIL ON with P1326, KSDS Wire Harness Inspection Pass, Engine Noise Inspection Pass, & KSDS Extension Harness Install	180A32RM	1.1 M/H	91400 2T010QQK	1
				(PI1802W1) 2.0L T-GDI AWD MIL ON with P1326, KSDS Wire Harness Inspection Pass, Engine Noise Inspection Fail, & Engine Replacement	180A32R3	9.0 M/H	21111 2GK52QQK	1
							21111 2GK72QQK	1
							23311 25050	7
							21101 2GK32QQKR	1
				(PI1802W1) 2.0L T-GDI AWD MIL ON with P1326, KSDS Wire Harness Inspection Fail, KSDS Extension Harness Install	180A32R7	0.8 M/H	91400 2T010QQK	1

SUBJECT: ENGINE REPLACEMENT INSTRUCTIONS FOR DTC P1326 (PI1802W/X)

Model	Claim Type	Causal P/N	Qty.	Repair Description	Labor Op Code	Op Time	Replacement P/N	Qty.
Spo. (QL) 2.4L	R	23060 2G401	0	(PI1802W1) 2.4L GDI 2WD MIL ON with P1326, KSDS Wire Harness Inspection Pass, Engine Noise Inspection Pass, & KSDS Extension Harness Install	180114RK	1.1 M/H	91400 2T010QQK	1
				(PI1802W1) 2.4L GDI 2WD MIL ON with P1326, KSDS Wire Harness Inspection Pass, Engine Noise Inspection Fail, & Engine Replacement	180114R0	8.7 M/H	21111 2GK51QQK	1
							21111 2GK71QQK	1
							23311 25050	7
							21101 2GK35QQKR	1
				(PI1802W1) 2.4L GDI 2WD MIL ON with P1326, KSDS Wire Harness Inspection Fail, KSDS Extension Harness Install	180114R5	0.8 M/H	91400 2T010QQK	1
				(PI1802W1) 2.4L GDI AWD MIL ON with P1326, KSDS Wire Harness Inspection Pass, Engine Noise Inspection Pass, & KSDS Extension Harness Install	180114RM	1.1 M/H	91400 2T010QQK	1
				(PI1802W1) 2.4L GDI AWD MIL ON with P1326, KSDS Wire Harness Inspection Pass, Engine Noise Inspection Fail, & Engine Replacement	180114R2	9.0 M/H	21111 2GK51QQK	1
							21111 2GK71QQK	1
							23311 25050	7
							21101 2GK35QQKR	1
				(PI1802W1) 2.4L GDI AWD MIL ON with P1326, KSDS Wire Harness Inspection Fail, KSDS Extension Harness Install	180114R7	0.8 M/H	91400 2T010QQK	1

SUBJECT: ENGINE REPLACEMENT INSTRUCTIONS FOR DTC P1326 (PI1802W/X)

Model	Claim Type	Causal P/N	Qty.	Repair Description	Labor Op Code	Op Time	Replacement P/N	Qty.
Spo. (QL) 2.0L T	R	23060 2G401	0	(PI1802W1) 2.0L T-GDI 2WD MIL ON with P1326, KSDS Wire Harness Inspection Pass, Engine Noise Inspection Pass, & KSDS Extension Harness Install	180114RN	1.1 M/H	91400 2T010QQK	1
				(PI1802W1) 2.0L T-GDI 2WD MIL ON with P1326, KSDS Wire Harness Inspection Pass, Engine Noise Inspection Fail, & Engine Replacement	180114R3	8.7 M/H	21111 2GK52QQK	1
							21111 2GK72QQK	1
							23311 25050	7
							21101 2GK39QQKR	1
				(PI1802W1) 2.0L T-GDI 2WD MIL ON with P1326, KSDS Wire Harness Inspection Fail, KSDS Extension Harness Install	180114R8	0.8 M/H	91400 2T010QQK	1
				(PI1802W1) 2.0L T-GDI AWD MIL ON with P1326, KSDS Wire Harness Inspection Pass, Engine Noise Inspection Pass, & KSDS Extension Harness Install	180114RO	1.1 M/H	91400 2T010QQK	1
				(PI1802W1) 2.0L T-GDI AWD MIL ON with P1326, KSDS Wire Harness Inspection Pass, Engine Noise Inspection Fail, & Engine Replacement	180114R4	9.0 M/H	21111 2GK52QQK	1
							21111 2GK72QQK	1
							23311 25050	7
							21101 2GK39QQKR	1
				(PI1802W1) 2.0L T-GDI AWD MIL ON with P1326, KSDS Wire Harness Inspection Fail, KSDS Extension Harness Install	180114R9	0.8 M/H	91400 2T010QQK	1

SUBJECT: ENGINE REPLACEMENT INSTRUCTIONS FOR DTC P1326 (PI1802W/X)

Model	Claim Type	Causal P/N	Qty.	Repair Description	Labor Op Code	Op Time	Replacement P/N	Qty.
Opt. (JF) 2.4L	R	23060 2G401	0	(PI1802W1) 2.4L GDI MIL ON with P1326, KSDS Wire Harness Inspection Pass, Engine Noise Inspection Pass, & KSDS Extension Harness Install	180113RK	1.1 M/H	91400 2T010QQK	1
				(PI1802W1) 2.4L GDI MIL ON with P1326, KSDS Wire Harness Inspection Pass, Engine Noise Inspection Fail, & Engine Replacement	180113R0	8.7 M/H	21111 2GK51QQK	1
							21111 2GK71QQK	1
							23311 25050	7
							21101 2GK34QQKR	1
				(PI1802W1) 2.4L GDI MIL ON with P1326, KSDS Wire Harness Inspection Fail, KSDS Extension Harness Install	180113R5	0.8 M/H	91400 2T010QQK	1
Opt. (JFa) 2.4L	R	23060 2G401	0	(PI1802W1) 2.4L GDI MIL ON with P1326, KSDS Wire Harness Inspection Pass, Engine Noise Inspection Pass, & KSDS Extension Harness Install	180A33R4	1.1 M/H	91400 2T010QQK	1
				(PI1802W1) 2.4L GDI MIL ON with P1326, KSDS Wire Harness Inspection Pass, Engine Noise Inspection Fail, & Engine Replacement	180A33R0	8.7 M/H	21111 2GK51QQK	1
							21111 2GK71QQK	1
							23311 25050	7
							21101 2GK34QQKR	1
				(PI1802W1) 2.4L GDI MIL ON with P1326, KSDS Wire Harness Inspection Fail, KSDS Extension Harness Install	180A33R2	0.8 M/H	91400 2T010QQK	1
Opt. (JFa) 2.0L T	R	23060 2G401	0	(PI1802W1) 2.0L T-GDI MIL ON with P1326, KSDS Wire Harness Inspection Pass, Engine Noise Inspection Pass, & KSDS Extension Harness Install	180A33R5	1.1 M/H	91400 2T010QQK	1
				(PI1802W1) 2.0L T-GDI MIL ON with P1326, KSDS Wire Harness Inspection Pass, Engine Noise Inspection Fail, & Engine Replacement	180A33R1	8.7 M/H	21111 2GK52QQK	1
							21111 2GK72QQK	1
							23311 25050	7
							21101 2GK32QQKR	1
				(PI1802W1) 2.0L T-GDI MIL ON with P1326, KSDS Wire Harness Inspection Fail, KSDS Extension Harness Install	180A33R3	0.8 M/H	91400 2T010QQK	1

SUBJECT: ENGINE REPLACEMENT INSTRUCTIONS FOR DTC P1326 (PI1802W/X)

WARRANTY INFORMATION (PI1802**X1**, ENGINE SEIZED/SEVERE KNOCKING):

N Code: N99 C Code: C99

Model	Claim Type	Causal P/N	Qty.	Repair Description	Labor Op Code	Op Time	Replacement P/N	Qty.
Sor. (XMa) 2.4L	R	21020 2G010	0	(PI1802**X1**) 2.4L GDI 2WD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Pass	180A12R8	8.4 M/H	21111 2GK50QQK	1
							21111 2GK70QQK	1
							23311 25050	7
							(ULEV or SULEV) 21101 2GK11QQKR	1
				(PI1802**X1**) 2.4L GDI 2WD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Fail, KSDS Wire Harness Install	180A12RA	8.9 M/H	21111 2GK50QQK	1
							21111 2GK70QQK	1
							23311 25050	7
							(ULEV or SULEV) 21101 2GK11QQKR	1
							*91400 2T100QQK	1
				(PI1802**X1**) 2.4L GDI AWD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Pass	180A12R9	8.6 M/H	21111 2GK50QQK	1
							21111 2GK70QQK	1
							23311 25050	7
							(ULEV or SULEV) 21101 2GK11QQKR	1
				(PI1802**X1**) 2.4L GDI AWD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Fail, KSDS Wire Harness Install	180A12RB	9.1 M/H	21111 2GK50QQK	1
							21111 2GK70QQK	1
							23311 25050	7
							(ULEV or SULEV) 21101 2GK11QQKR	1
							*91400 2T100QQK	1

***NOTE: Old part number 91400 2T000QQK has been superseded by new part number 91400 2T100QQK.**

SUBJECT: ENGINE REPLACEMENT INSTRUCTIONS FOR DTC P1326 (PI1802W/X)

Model	Claim Type	Causal P/N	Qty.	Repair Description	Labor Op Code	Op Time	Replacement P/N	Qty.
Opt. (QF) 2.4L	R	23060 2G400	0	(PI1802X1) 2.4L GDI Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Pass	18OA16R9	8.4 M/H	21111 2GK50QQK	1
							21111 2GK70QQK	1
							23311 25050	7
							21101 2GK06QQKR	1
				(PI1802X1) 2.4L GDI Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Fail, KSDS Wire Harness Install	18OA16RB	8.9 M/H	21111 2GK50QQK	1
							21111 2GK70QQK	1
							23311 25050	7
							21101 2GK06QQKR	1
							*91400 2T100QQK	1
Opt. (QF) 2.0L T	R	23060 2G400	0	(PI1802X1) 2.0L T-GDI Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Pass	18OA16R8	8.7 M/H	21111 2GK60QQK	1
							21111 2GK70QQK	1
							23311 25050	7
							21101 2GK06QQKR	1
				(PI1802X1) 2.0L T-GDI Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Fail, KSDS Wire Harness Install	18OA16RA	9.2 M/H	21111 2GK60QQK	1
							21111 2GK70QQK	1
							23311 25050	7
							21101 2GK06QQKR	1
							*91400 2T100QQK	1
Opt. (TF) 2.4L	R	23060 2G400	0	(PI1802X1) 2.4L GDI Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Pass	18D111RA	8.4 M/H	21111 2GK50QQK	1
							21111 2GK70QQK	1
							23311 25050	7
							21101 2GK06QQKR	1
				(PI1802X1) 2.4L GDI Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Fail, KSDS Wire Harness Install	18D111RF	8.9 M/H	21111 2GK50QQK	1
							21111 2GK70QQK	1
							23311 25050	7
							21101 2GK06QQKR	1
							*91400 2T100QQK	1

***NOTE: Part number 91400 2T000QQK has been superseded by a new part number 91400 2T100QQK.**

SUBJECT: ENGINE REPLACEMENT INSTRUCTIONS FOR DTC P1326 (PI1802W/X)

Model	Claim Type	Causal P/N	Qty.	Repair Description	Labor Op Code	Op Time	Replacement P/N	Qty.
Spo. (SL) 2.4L	R	23060 2G400	0	(PI1802X1) 2.4L GDI 2WD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Pass	180112RA	7.7 M/H	21111 2GK50QGK	1
							21111 2GK70QGK	1
							23311 25050	7
							21101 2GK36QGKR	1
				(PI1802X1) 2.4L GDI 2WD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Fail, KSDS Wire Harness Install	180112RF	8.3 M/H	21111 2GK50QGK	1
							21111 2GK70QGK	1
							23311 25050	7
							21101 2GK36QGKR	1
							*91400 2T100QGK	1
				(PI1802X1) 2.4L GDI AWD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Pass	180112RC	8.1 M/H	21111 2GK50QGK	1
							21111 2GK70QGK	1
							23311 25050	7
							21101 2GK36QGKR	1
				(PI1802X1) 2.4L GDI AWD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Fail, KSDS Wire Harness Install	180112RH	8.7 M/H	21111 2GK50QGK	1
							21111 2GK70QGK	1
							23311 25050	7
							21101 2GK36QGKR	1
							*91400 2T100QGK	1
Spo. (SL) 2.0L T	R	23060 2G400	0	(PI1802X1) 2.0L T-GDI 2WD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Pass	180112RD	7.7 M/H	21111 2GK60QGK	1
							21111 2GK70QGK	1
							23311 25050	7
							21101 2GK37QGKR	1
				(PI1802X1) 2.0L T-GDI 2WD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Fail, KSDS Wire Harness Install	180112RI	8.3 M/H	21111 2GK60QGK	1
							21111 2GK70QGK	1
							23311 25050	7
							21101 2GK37QGKR	1
							*91400 2T100QGK	1
				(PI1802X1) 2.0L T-GDI AWD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Pass	180112RE	8.1 M/H	21111 2GK60QGK	1
							21111 2GK70QGK	1
							23311 25050	7
							21101 2GK37QGKR	1
				(PI1802X1) 2.0L T-GDI AWD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Fail, KSDS Wire Harness Install	180112RJ	8.7 M/H	21111 2GK60QGK	1
							21111 2GK70QGK	1
							23311 25050	7
							21101 2GK37QGKR	1
							*91400 2T100QGK	1

***NOTE: Old part number 91400 2T000QGK has been superseded by new part number 91400 2T100QGK.**

SUBJECT: ENGINE REPLACEMENT INSTRUCTIONS FOR DTC P1326 (PI1802W/X)

Model	Claim Type	Causal P/N	Qty.	Repair Description	Labor Op Code	Op Time	Replacement P/N	Qty.
Sor. (UMa) 2.4L	R	23060 2G401	0	(PI1802X1) 2.4L GDI 2WD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Pass	180A32RA	8.4 M/H	21111 2GK51QGK	1
							21111 2GK71QGK	1
							23311 25050	7
							(16-17MY) 21101 2GK31QGKR	1
							(18MY) 21101 2GK33QGKR	
				(PI1802X1) 2.4L GDI 2WD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Fail, KSDS Wire Harness Install	180A32RB	8.9 M/H	21111 2GK51QGK	1
							21111 2GK71QGK	1
							23311 25050	7
							(16-17MY) 21101 2GK31QGKR	1
							(18MY) 21101 2GK33QGKR	
							91400 2T010QGK	1
				(PI1802X1) 2.4L GDI AWD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Pass	180A32RE	8.7 M/H	21111 2GK51QGK	1
							21111 2GK71QGK	1
							23311 25050	7
							(16-17MY) 21101 2GK31QGKR	1
							(18MY) 21101 2GK33QGKR	
				(PI1802X1) 2.4L GDI AWD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Fail, KSDS Wire Harness Install	180A32RF	9.2 M/H	21111 2GK51QGK	1
							21111 2GK71QGK	1
							23311 25050	7
							(16-17MY) 21101 2GK31QGKR	1
							(18MY) 21101 2GK33QGKR	
							91400 2T010QGK	1
Sor. (UMa) 2.0L T	R	23060 2G401	0	(PI1802X1) 2.0L T-GDI 2WD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Pass	180A32RC	8.4 M/H	21111 2GK52QGK	1
							21111 2GK72QGK	1
							23311 25050	7
							21101 2GK32QGKR	1
				(PI1802X1) 2.0L T-GDI 2WD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Fail, KSDS Wire Harness Install	180A32RD	8.9 M/H	21111 2GK52QGK	1
							21111 2GK72QGK	1
							23311 25050	7
							21101 2GK32QGKR	1
							91400 2T010QGK	1
				(PI1802X1) 2.0L T-GDI AWD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Pass	180A32RG	8.7 M/H	21111 2GK52QGK	1
							21111 2GK72QGK	1
							23311 25050	7
							21101 2GK32QGKR	1
				(PI1802X1) 2.0L T-GDI AWD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Fail, KSDS Wire Harness Install	180A32RH	9.2 M/H	21111 2GK52QGK	1
							21111 2GK72QGK	1
							23311 25050	7
							21101 2GK32QGKR	1
							91400 2T010QGK	1

SUBJECT: ENGINE REPLACEMENT INSTRUCTIONS FOR DTC P1326 (PI1802W/X)

Model	Claim Type	Causal P/N	Qty.	Repair Description	Labor Op Code	Op Time	Replacement P/N	Qty.
Spo. (QL) 2.4L	R	23060 2G401	0	(PI1802X1) 2.4L GDI 2WD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Pass	180114RA	8.4 M/H	21111 2GK51QGK	1
							21111 2GK71QGK	1
							23311 25050	7
							21101 2GK35QGKR	1
				(PI1802X1) 2.4L GDI 2WD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Fail, KSDS Wire Harness Install	180114RF	8.9 M/H	21111 2GK51QGK	1
							21111 2GK71QGK	1
							23311 25050	7
							21101 2GK35QGKR	1
							91400 2T010QGK	1
				(PI1802X1) 2.4L GDI AWD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Pass	180114RC	8.7 M/H	21111 2GK51QGK	1
							21111 2GK71QGK	1
							23311 25050	7
							21101 2GK35QGKR	1
				(PI1802X1) 2.4L GDI AWD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Fail, KSDS Wire Harness Install	180114RH	9.2 M/H	21111 2GK51QGK	1
							21111 2GK71QGK	1
							23311 25050	7
							21101 2GK35QGKR	1
							91400 2T010QGK	1
Spo. (QL) 2.0L T	R	23060 2G401	0	(PI1802X1) 2.0L T-GDI 2WD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Pass	180114RD	8.4 M/H	21111 2GK52QGK	1
							21111 2GK72QGK	1
							23311 25050	7
							21101 2GK39QGKR	1
				(PI1802X1) 2.0L T-GDI 2WD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Fail, KSDS Wire Harness Install	180114RI	8.9 M/H	21111 2GK52QGK	1
							21111 2GK72QGK	1
							23311 25050	7
							21101 2GK39QGKR	1
							91400 2T010QGK	1
				(PI1802X1) 2.0L T-GDI AWD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Pass	180114RE	8.7 M/H	21111 2GK52QGK	1
							21111 2GK72QGK	1
							23311 25050	7
							21101 2GK39QGKR	1
				(PI1802X1) 2.0L T-GDI AWD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Fail, KSDS Wire Harness Install	180114RJ	9.2 M/H	21111 2GK52QGK	1
							21111 2GK72QGK	1
							23311 25050	7
							21101 2GK39QGKR	1
							91400 2T010QGK	1

SUBJECT: ENGINE REPLACEMENT INSTRUCTIONS FOR DTC P1326 (PI1802W/X)

Model	Claim Type	Causal P/N	Qty.	Repair Description	Labor Op Code	Op Time	Replacement P/N	Qty.
Opt. (JF) 2.4L	R	23060 2G401	0	(PI1802X1) 2.4L GDI Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Pass	18D113RA	8.4 M/H	21111 2GK51QGK	1
							21111 2GK71QGK	1
							23311 25050	7
							21101 2GK34QGKR	1
				(PI1802X1) 2.4L GDI Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Fail, KSDS Wire Harness Install	18D113RF	8.9 M/H	21111 2GK51QGK	1
							21111 2GK71QGK	1
							23311 25050	7
							21101 2GK34QGKR	1
							91400 2T010QGK	1
Opt. (JFa) 2.4L	R	23060 2G401	0	(PI1802X1) 2.4L GDI Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Pass	18A33RA	8.4 M/H	21111 2GK51QGK	1
							21111 2GK71QGK	1
							23311 25050	7
							21101 2GK34QGKR	1
				(PI1802X1) 2.4L GDI Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Fail, KSDS Wire Harness Install	18A33RB	8.9 M/H	21111 2GK51QGK	1
							21111 2GK71QGK	1
							23311 25050	7
							21101 2GK34QGKR	1
							91400 2T010QGK	1
Opt. (JFa) 2.0L T	R	23060 2G401	0	(PI1802X1) 2.0L T-GDI Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Pass	18A33RC	8.7 M/H	21111 2GK52QGK	1
							21111 2GK72QGK	1
							23311 25050	7
							21101 2GK32QGKR	1
				(PI1802X1) 2.0L T-GDI Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Fail, KSDS Wire Harness Install	18A33RD	9.2 M/H	21111 2GK52QGK	1
							21111 2GK72QGK	1
							23311 25050	7
							21101 2GK32QGKR	1
							91400 2T010QGK	1

NOTE: Refer to Warranty Bulletin 2018-10 for details regarding coolant and substitute transportation reimbursement requirements.

Old part number 91400 2T000QGK has been superseded by new part number 91400 2T100QGK. See Parts Bulletin 91-914 0003 for details.

Use sublet code 'X3' with a maximum allowed amount of $19.80 for "ENGINE R&R" engine oil reimbursement.

If the replacement of the Oil Cooler Tube Assembly was required, please manually enter the applicable Oil Cooler Tube Assembly part number to the claim's related parts section.

Dispose of old parts in accordance with local, state, and Federal regulations.

★ NOTICE

VIN inquiry data for this repair is provided for tracking purposes only. Kia retailers should reference PI1802W/X* when accessing the WebDCS system.

Appendix 1 (Warranty Claim Authorization)

	Scenario	Description	Action Required
1	Campaign - TSB # PI1802W/X Case for Warranty Authorization **NO INSPECTION**	Wiring Signal Interference Check cannot be completed due to engine seizure or other engine failure (won't run long enough to complete the test)	**TL PWA required for all dealers – Video of condition and WRTY143 form required*** Video requirement examples below are for illustration purposes, individual requirements will vary based upon the condition reported: • Video should be continuous and show the VIN (most convenient VIN plate) and pan to show the engine condition • For engine seizures, attempt to turn over engine with breaker bar in video • For hole in engine block, show hole in video

Appendix 2 (Video Capture & Upload)

Capturing a video is often helpful in assisting the Kia Techline Agent in determining a proper diagnosis strategy. Once a TechLine case is open, the following procedure will guide you through the video capture and upload.

The Chrome™ browser should be used to access the Techline portal. Follow the steps below to clear the default browser if it is other than Chrome™.

For KDS Tab 10.1 Tablets:

1. Select "Settings" from the App Screen.
2. Select the "General" tab at the top.
3. Select "Default Applications".
4. If "Internet" is the default browser, select the CLEAR button.

   If "Chrome" is the default browser, further action is not required.



5. When opening the Techline portal, select "Chrome" and select Always".



For KDS Tab S2 Tablets:

1. Select "Settings" from the App Screen.
2. Select "Applications".
3. Select "Default Applications".



4. Select "Browser app".



5. Ensure "Chrome" is selected.



Setting Your Video Size to "Limit to Email"

1. Select "Camera" from the App Screen.



2. Select the Settings icon.



3. Select the Video Camera icon.



4. Ensure "Limit to email" is selected.



Attaching Video to a Techline Case

1. Open K-Support in the device Chrome™ browser or select the "Techline" button on KDS home page.

   https://ksupport.kiausa.com



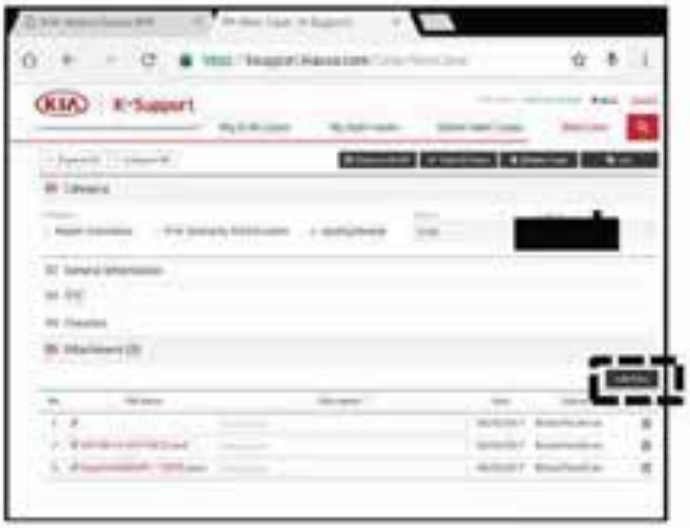
2. Open your existing Techline case for the vehicle requiring a video capture by selecting the case number.



3. Select "Attachment".



4. Select "Add Files".



5. Select "Camcorder" and the video camera will open.



6. Start by recording the VIN. Ensure sun glare is not reflecting off windows or other objects.

   Without stopping the recording, capture the area of the vehicle displaying the issue. i.e.;

   - Engine Noise – record the engine.
   - Hole In Block – record the side of the engine with the damage.
   - Seized Engine – record a technician trying to turn the engine over with a breaker bar.



*** NOTICE**

NOTE: Ensure the video size is set to "Limit to email" (see page 4). <u>Only record the VIN and the engine exhibiting the concern.</u> Any additional information will increase the size of the video and make it difficult to upload or download.

7. Stop the video when you captured what is needed. Select "OK" to use this capture or "RETRY" to capture the video again.

8. Ensure a description of the recording. For example, engine knock or smoke from exhaust.

9. Select "Submit Case".



10. Select "Yes" when the confirmation message below appears.

    Note: Selecting anything other than "Yes" will not save the video capture.



Appendix 3 (Engine Noise Adapter Threshold)

Code	Concern	Action
RETEST Code 001	Any measured value out of range / below lower limit	Contact GIT America
RETEST Code 002	Any measured value out of range / over upper limit	Contact GIT America
RETEST Code 003	Difference between minimum and maximum of 2000 RPM or Idle RPM measured value out of range	Perform Retest three (3) more times. If Error Code 003 still displays after the third attempt, contact GIT America.
RETEST Code 004	Difference between minimum and maximum of 2000 RPM and Idle RPM measured value out of range	Perform Retest three (3) more times. If Error Code 004 still displays after the third attempt, contact GIT America.
RETEST Code 005	The adapter/extension cable is unplugged or damaged after test started	Perform Retest three (3) more times. If Error Code 005 still displays after the third attempt, contact GIT America.

GIT America can be contacted at (888) 542-4371.

PE19-004

KIA

TAB 67_PI1802WX_TSB_R5 - submitted on line

	GROUP	MODEL
KIA	**Product Improvement**	**See Model List on Page 1**
	NUMBER	DATE
	PI1802W/X (Rev 5, 04/10/2019)	**October 2018**

PRODUCT IMPROVEMENT CAMPAIGN

SUBJECT: ENGINE REPLACEMENT INSTRUCTIONS FOR DTC P1326 (PI1802W/X)

★ NOTICE

This bulletin has been revised to include additional information. New/revised sections of this bulletin are indicated by a black bar in the margin area.

This bulletin provides information related to the Technical Service Bulletin previously published in July 2018 (PI1802, Rev 6, 01/31/2019) titled "Knock Sensor Detection System - ECU Logic Improvement". Specifically, this bulletin provides instructions on which procedures to follow if, after installation of the KSDS, any one of the subject vehicles below returns to the dealer with Diagnostic Trouble Code ("DTC"), P1326.

Year	Model	Engine	Production Date
2014	Optima (TF)	2.4L GDI	8/29/13 – 4/25/14
2015-2018	Optima (TF/QF/JF/JFa)	2.4L & 2.0L T-GDI	4/16/14 – 7/11/18
2014-2018	Sportage (SL/QL)	2.4L & 2.0L T-GDI	9/30/13 – 4/5/18
2015-2018	Sorento (XMa/UMa)	2.4L & 2.0L T-GDI	1/3/14 – 3/7/18

If DTC P1326 is present, first check for any wiring signal interference following the procedure set forth below before determining whether an engine replacement is necessary. Based on the results of the Wiring Signal Interference Check, dealers are to perform either the Knock Sensor Wiring Repair or, if the engine noise inspection result confirms it, the Engine Long-Block Replacement, according to the procedures in this TSB.

If the vehicle's engine is already seized or severely knocking, dealers are to perform the Engine Long-Block Replacement **and** the Wiring Signal Interference Check according to the procedures in this TSB.

A Vehicle Diagnosis Number (VDN) must be created with DTC P1326, prior to performing PI1802W/X. If a VDN is not created, Warranty claim submission issues may occur.

Before conducting the procedure, verify the vehicle is included in the list of affected VINs.

★ NOTICE

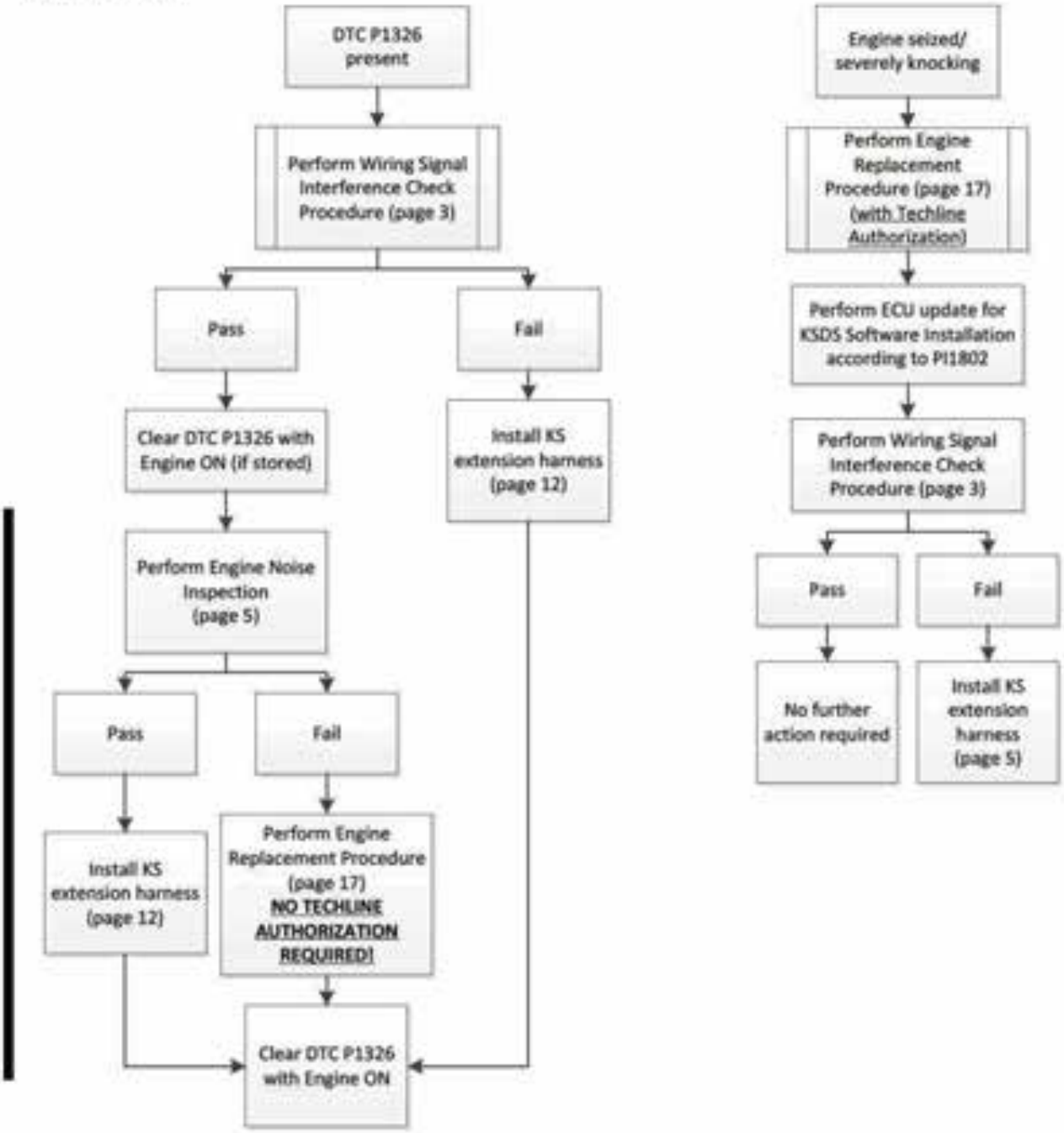
To ensure complete customer satisfaction, always remember to refer to WebDCS Warranty Coverage (validation) Inquiry Screen (Service → Warranty Coverage → Warranty Coverage Inquiry) for a list of any additional campaigns that may need to be performed on the vehicle before returning it to the customer.

File Under: <Product Improvement>

Circulate To: ☒ General Manager ☒ Service Manager ☒ Parts Manager ☒ Service Advisors ☒ Technicians ☒ Body Shop Manager ☐ Fleet Repair

SUBJECT: ENGINE REPLACEMENT INSTRUCTIONS FOR DTC P1326 (PI1802W/X)

Flow Chart:



Note: **If any concerns arise after completing the flow chart, open a Techline case online.**

★ IMPORTANT

ALL claims for engine or harness replacement without the required diagnostic inspection/results or authorization are subject to claim chargeback/denial without exception.

Wiring Signal Interference Check Procedure:

1. Using the KDS **(connected to the internet)**, perform a Fault Code Search and confirm DTC P1326 is present.
   - If P1326 is present, proceed to the next step to perform the wiring signal interference check.
   - **If the engine is seized or severely knocking**, proceed to the engine replacement procedure on page 17 (with Techline authorization per Flow Chart).



2. Start/warm up the engine and ensure **ENGINE OIL** is at operating temperature (176°F).



3. From the KDS Home Screen, select S/W Management.



4. Select Engine Control → Wiring Signal Interference Check.



5. Ensure the engine is on and at idle and **ENGINE OIL** temperature is at 176°F degrees or higher. Select OK to proceed.



5b. Select OK to proceed.

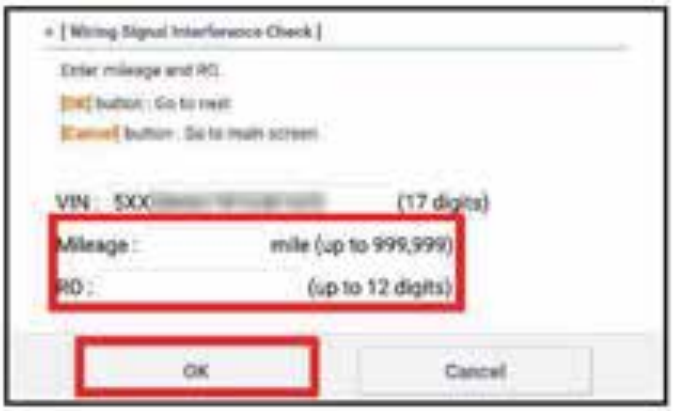
NOTE: This test should only be performed if Knock Sensor Detection System - ECU Logic Improvement (PI1802) has previously been completed.



5c. If the conditions are not met, a pop-up as shown will be displayed.



6. Enter vehicle mileage and RO number (VIN is automatically populated).



7. Wiring Signal Interference Check test will begin and take about three (3) minutes to complete. **NOTE**: Do not push on the accelerator pedal.



- If the result is "OK", **clear DTC P1326** and then proceed to the Engine Noise Inspection procedure on page 5.

*** NOTICE**

DTC P1326 must be cleared in order to perform the Engine Noise Inspection Procedure.

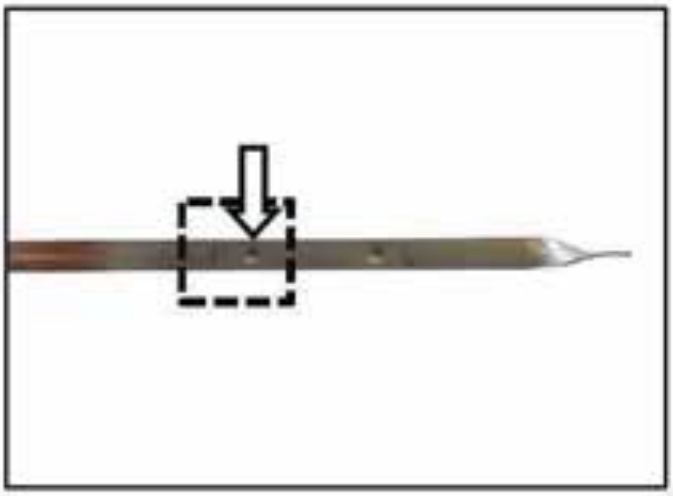


- If the result is "NOT OK", turn the engine off and proceed to **step 2** of the Knock Sensor (KS) Extension Harness Installation procedure on page 12.



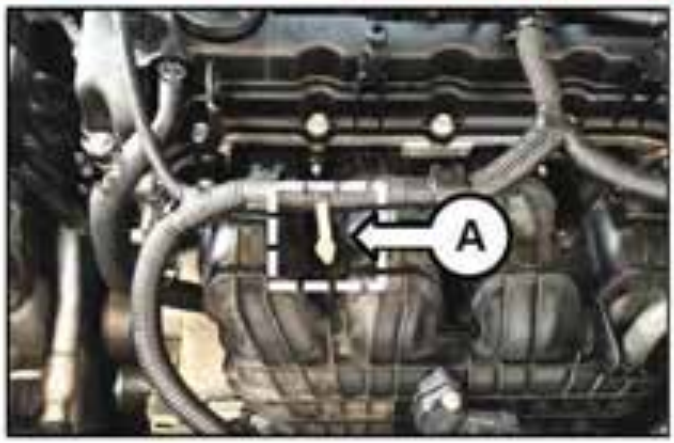
Engine Noise Inspection Procedure:

1. Prior to inspection, ensure the KDS is fully charged and is connected to the internet every day to ensure the latest update is received and installed.
   - Engine oil level should be at the "FULL" mark. Top off with 5W-30 if required.
   - Test requires the engine to be in satisfactory running condition and able to idle normally.
   - Engine coolant temperature should be above minimum test temperature: 185°F (85°C).



If the engine's running condition is poor due to issues unrelated to a connecting rod knocking noise (faulty sensors, intake/exhaust manifold leak, catalytic converter, etc.), diagnose and repair prior to performing this inspection procedure. If the engine cannot be tested or has other major concerns, **see Warranty Claim Authorization information on page 40**.

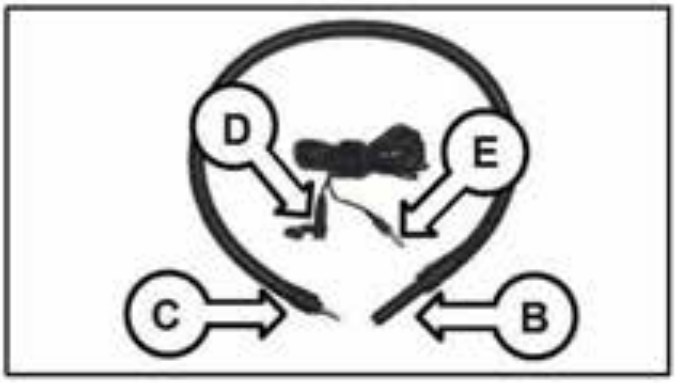
2. With the engine off, remove the dipstick (A).



*** NOTICE**

Engine cover removed in images for demonstration-only purposes.

3. Insert the engine noise tester SST adapter (B) into the dipstick tube then start and idle the engine.



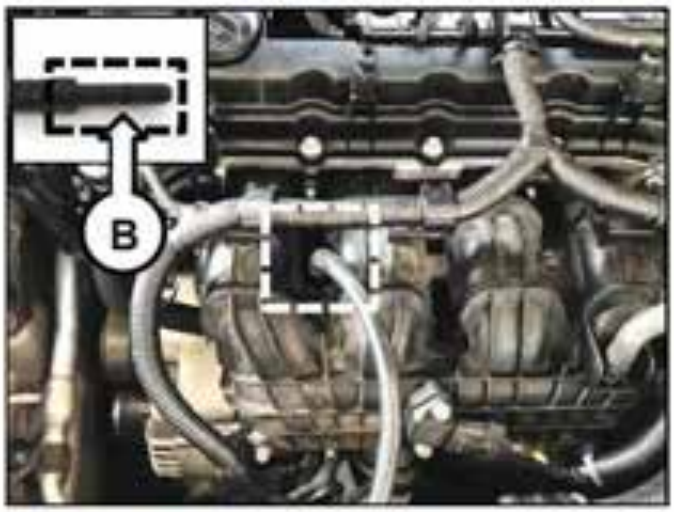
*** NOTICE**

To avoid false readings, ensure the adapter (B) is properly inserted into the dipstick tube and that the tube is not in contact with the intake manifold.

If the dipstick tube is not centered and is close to or touching the manifold, carefully adjust (bend) and center the dipstick tube with a pry bar.

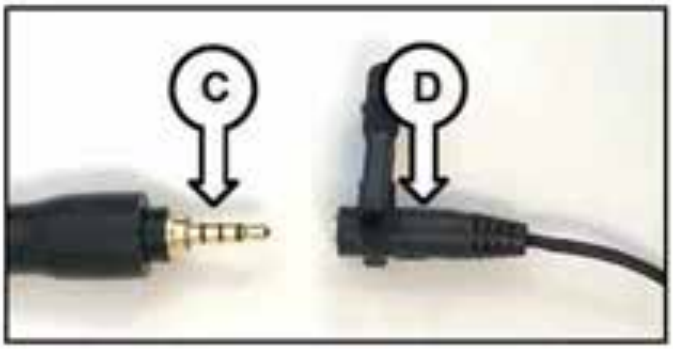


Not Centered Centered



Click here for a video tutorial of the Inspection Procedure.

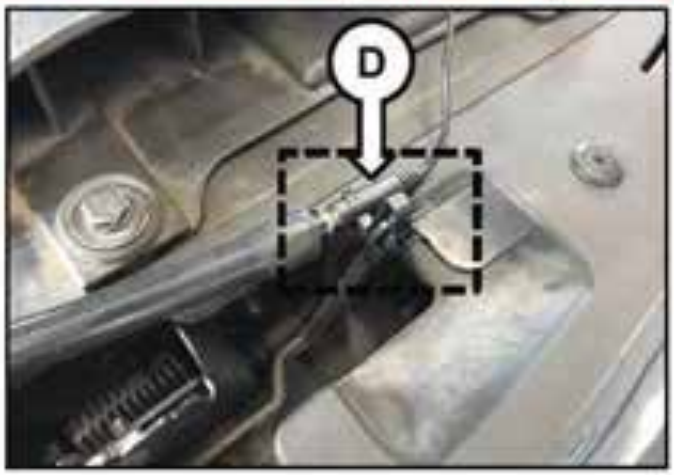
4. Connect the 3.5 mm male end of the engine noise tester SST (C) to the 3.5 mm female end of the extension cable (D).



5. Attach the SST clip of the extension cable (D) to the hood latch.

★ NOTICE

Make sure to route the extension cable away from moving parts (pulleys, fan, and belts and be careful not to get it pinched between door and body or window, etc.).



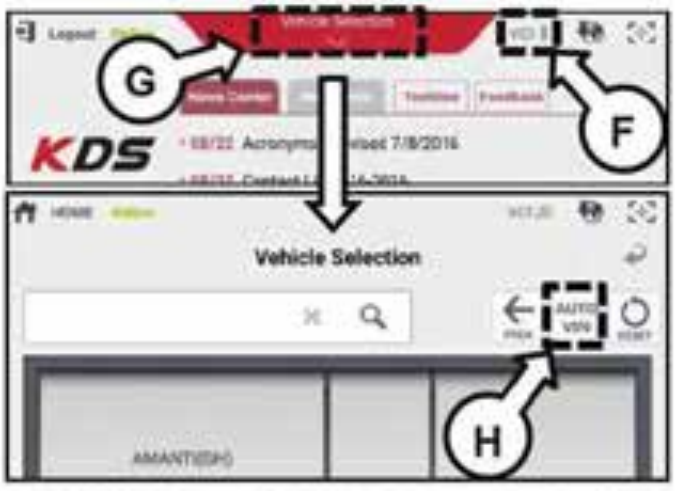
6. Connect the 3.5 mm male end (E) of the extension cable to the headphone port located at the upper left corner (KDS version 1.0) or at the bottom of the tablet (KDS version 2.0).



7. Connect the VCI-II to the OBD-II connector and launch the KDS application from the KDS tablet home page.



8. Confirm communication with VCI (F) and then configure the vehicle (G) using the **AUTO VIN** (H) feature.



9. Swipe up the "More" tab from the lower screen of the KDS and select "Special Inspection".



★ NOTICE

If the vehicle model/model year does not qualify for this campaign, a message will pop up; if so, verify that the vehicle is included in the list of affected VINs.

10. Complete the vehicle information form on the screen:

    - Mileage
    - RO number
    - Select "Verify" to verify the VIN

    Note: VIN must be verified with the "Verify" function in order to proceed to the next step.

    Select "Next" to continue.



11. Confirm that all of the pre-inspection items listed on the screen are true:

    - Engine Oil Level – Normal
    - Coolant Level – Normal
    - Engine Cover – Installed
    - Driver Window – Opened
    - A/C & Blower Motor – OFF
    - Audio & All Accessories – OFF
    - Engine – Warm up (185°F or higher)
    - Insert "A" into dipstick tube
    - Connect "B" part at tablet headphone port

    Select "Next" after checking items mentioned above.



12. The program will automatically check the engine sensors' data. Select the "Next" button if all the conditions are satisfied.
    - Engine Coolant Temperature: 185°F or higher
    - A/C Request to ECU: OFF

    Note: If the test item result is "NOT GOOD", correct the condition then select "Refresh Data".



13. Follow the instructions on the screen then select "Next".



14. Prior to the initial measurement, the program will automatically check if the engine noise tester is installed and operating correctly at engine idle and perform an internal diagnosis.

    Begin the second part of the engine noise tester check by selecting "Start".



*** NOTICE**

If the measured noise level is too low or abnormally high, an engine noise tester inspection message will pop up. Check and correct as necessary and start again.

15. With the vehicle in Park (A/T) / Neutral (M/T), increase and maintain the engine speed at 2,000-3,000 RPM for thirty (30) seconds.

    The program will automatically proceed to the next step when the engine noise tester is ready.



*** NOTICE**

Once the RPM is in the specified range, the time count (green bars) will be initialized.

16. With the vehicle in Park (A/T) / Neutral (M/T), begin the "2000rpm Test" by increasing and maintaining engine speed between 1,900-2,100 (2.4L) or 1,900-2,200 (2.0T) RPM until all three (3) measurements are complete.



17. When the "2000rpm Test" is complete, release the accelerator pedal so that engine maintains idle state for the "Idle Test".

18. The "Idle Test" will automatically begin. Keep the engine at idle and wait until all three (3) measurements are complete.



19. After the completion of the engine noise inspection, the KDS will automatically generate/display a "PASS" or "NO PASS" result.

    - If the inspection result is "PASS", proceed to the KS Extension Harness Installation procedure on page 12.
    - If the inspection result is "NO PASS," proceed to the engine replacement procedure on page 17.
    - If the inspection result is "RETEST" with an error code, see Adapter Error Code chart in Appendix 4 on page 45 for corrective action then repeat the inspection procedure starting from step 9.



20. Select "Finish" to complete the engine noise inspection. Ensure the KDS is connected to the internet and the "Special Inspection" KDS application is open to automatically submit the results to the Kia Server. To save and/or print the results as PDF, select "Print".

    If the KDS is not connected to the internet, up to five (5) results will stay pending in the queue until the KDS is connected to the internet with the "Special Inspection" application open.

    Note: The five (5) pending results must be submitted before a sixth (6th) test can be conducted.



21. Disconnect the engine noise tester from the KDS and carefully remove the adapter (B) from the dipstick tube by grasping the engine noise tester adapter.

KS Extension Harness Installation Procedure:

NOTE: Photos below are from a 15MY Optima (QF). Components and their location may vary in different models.

1. Inspect the ECU harness (A) and verify if the Knock Sensor wiring extension harness (B) has previously been installed.

   NOTE: To identify the extension harness (B), look for an external harness (B) which should be cable-tied to the existing wiring harness (A) leading by the intake manifold (C) to the knock sensor (D), as shown.

   - If the extension harness (B) has been installed, open a Techline case online.
   - If the extension harness (B) has not been installed, proceed to the next step.

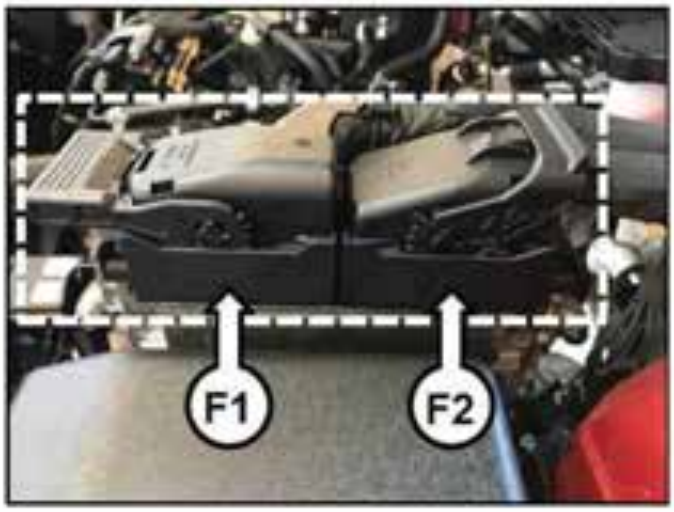




2. Remove the air cleaner and duct assembly (E).



3. Disconnect the ECU connector* (figure F1 **or** F2) (*see IMPORTANT note below).



*** IMPORTANT**

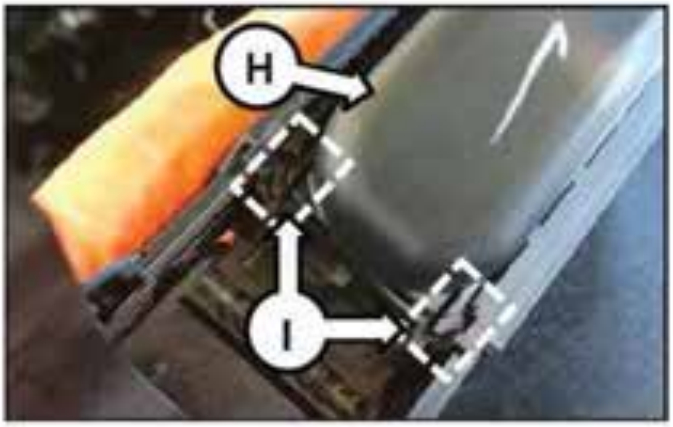
Location of the ECU connector may vary from model to model. Refer to the table on page 13 for the ECU connector number and the applicable ETM Manual on KGIS for the location of the ECU connector.

MY	Model	Engine	ECU Connector Number
2014-2015	TF	2.4	C200-B
2015	QF	2.4	C200-B
		2.0T	C100-B
2016-2018	JF/JFa	2.4	C200-A
	JFa	2.0T	C100-A
2015	XMa	2.4	C300-B
2016-2018	UMa	2.4	C100-A
		2.0T	C200-A
2014-2016	SL	2.4	CHGG-BG
		2.0T	CHTG-BG
2017-2018	QL	2.4	C100-A
		2.0T	C200-A

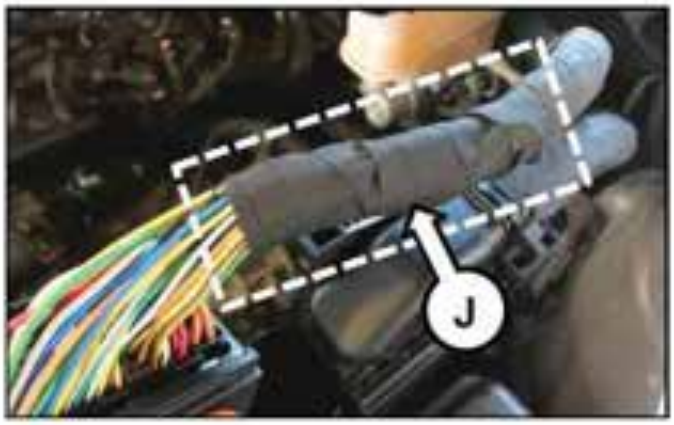
4. Cut the existing cable-tie (G) from the connector.



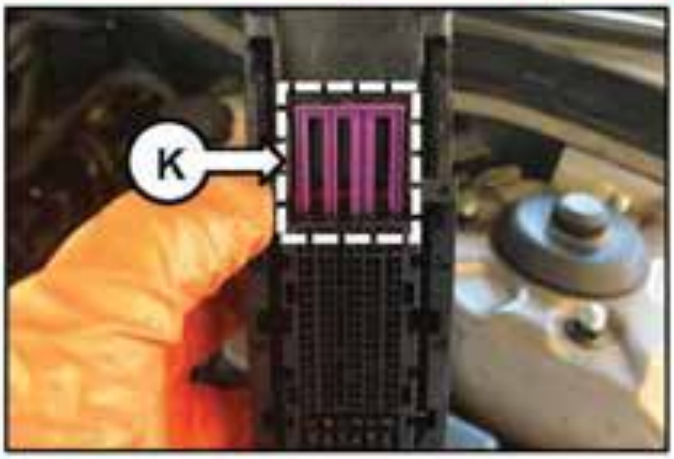
5. Remove the ECU connector cover (H) by carefully unclipping the two (2) tabs (I) and sliding the cover (H) towards the tabs (I).



6. Carefully remove the electrical tape (J) to expose the harness wires.



7. Remove the pin retainer (K).

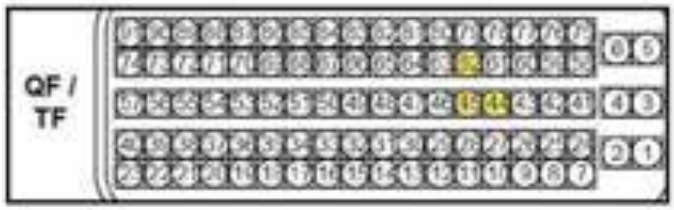


8. Locate the three (3) knock sensor circuit terminals from the ECU connector. Refer to the "Schematic Diagrams → Engine Electrical System → Engine Control System → Schematic Diagrams" chapter of the applicable ETM on KGIS.

QF, TF, XMa, and SL	
Pin	Wire
44	Knock Sensor Shielded Ground
45	Knock Sensor Ground
62	Knock Sensor Interface (Signal)

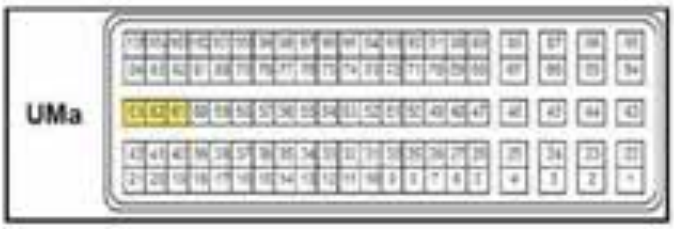
UMa, JF, JFa, and QL	
Pin	Wire
61	Knock Sensor Shielded Ground
62	Knock Sensor Ground
63	Knock Sensor Interface (Signal)

Click here to see a video of terminal removal.









*** IMPORTANT**

Location of the ECU connector may vary from model to model. Refer to the table on page 6 for the ECU connector number and the applicable ETM Manual on KGIS for the location of the ECU connector.

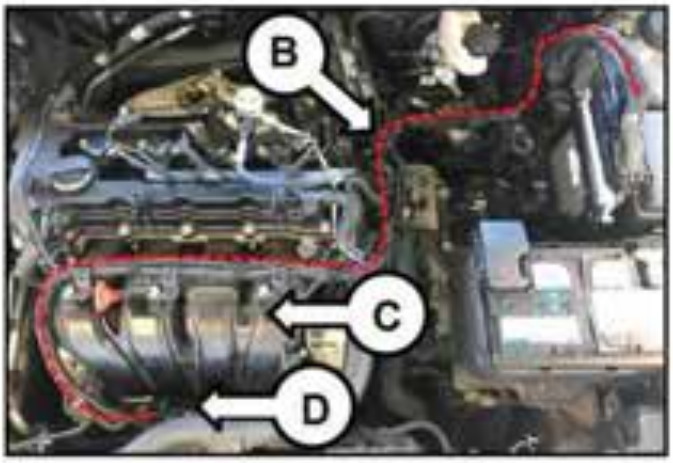
9. Remove the three (3) terminals **one at a time** and insert the new terminals of the extension harness into the ECU connector (F). Reinstall pin retainer (K) and reassemble the connector (F).



QF, TF, XMa, and SL	
Pin	**Extension Wire Color**
44	Blue
45	Black
62	Red
UMa, JF, JFa, and QL	
Pin	**Extension Wire Color**
61	Blue
62	Black
63	Red

NOTE: Be sure to note the rotational position of the terminals during removal. They are directional and need to be reinstalled in the same "clock" position.

10. Route the extension harness (B) along the existing harness (A) leading by the intake manifold (C) to the knock sensor (D), **exactly** as shown.



*** IMPORTANT**

The harness (B) must be routed exactly as shown to prevent related DTCs.

*** IMPORTANT**

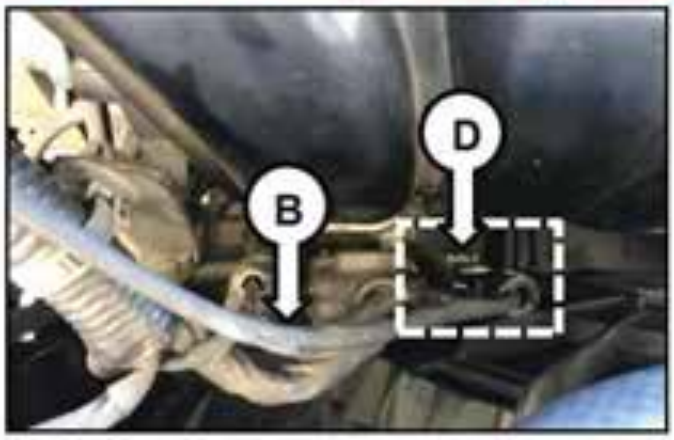
The harness (B) must be routed above and secured to the harness protector (L1) and UNDER the Breather Hose (L2) and Camshaft Position Sensor (L3).





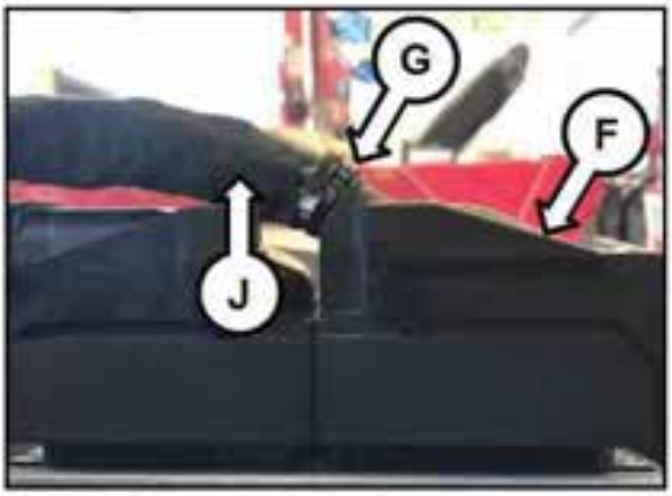


11. Connect the extension harness (B) to the knock sensor (D).

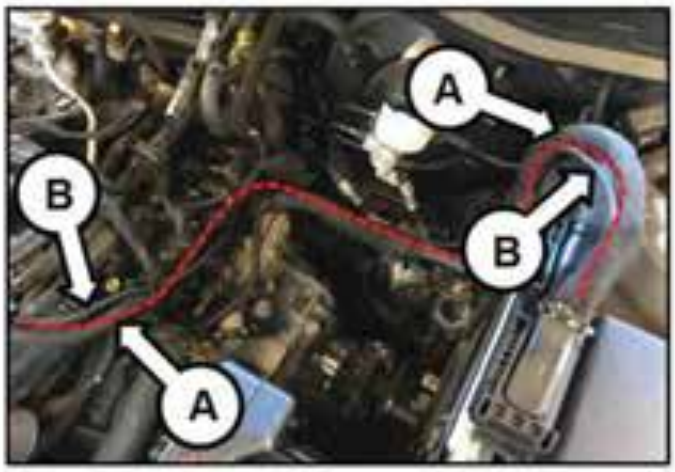


12. Cut off and discard the three (3) old knock sensor circuit terminals and the old knock sensor connector and secure the remaining wires to the new extension harness using the supplied electrical tape. **NOTE**: Complete removal of the old knock sensor wires is not necessary. Only remove the old terminals and connector.

13. Secure the extension harness at the connector (F) by replacing the cable-tie (G) removed in step 4 with a new supplied cable-tie and the electrical tape (J) removed in step 6 with new supplied electrical tape.



14. Secure the extension harness (B) to the existing harness (A) using the supplied cable-ties. Tuck and secure any excess wiring of the extension harness near the ECU with cable-tie.



15. Reinstall all removed components in the reverse order of removal.

16. Erase the P1326 DTC with the KDS and start the engine to confirm proper operation.

SUBJECT: ENGINE REPLACEMENT INSTRUCTIONS FOR DTC P1326 (PI1802W/X)

Engine Replacement Procedure:

1. Remove the engine assembly by referring to the "Engine And Transmission (Transaxle) Assembly → Engine And Transmission (Transaxle) Assembly → Repair procedures" chapter in the applicable Shop Manual on KGIS.

   Refer to TSB ENG190 for information regarding engine replacement practices.



2. After removal of the engine from the vehicle, remove all components that will need to be transferred by referring to the applicable Shop Manual on KGIS.

3. Place the new engine block on an engine stand.

4. Install all removed components from the old engine block onto the new engine block utilizing all parts from Service Kit I and II. Be advised of notes below.

   Tightening torque for Knock Sensor:
   13.7 – 17.4 lb.ft (18.6 – 23.5 N.m, 1.9 – 2.4 kgf.m)

   Notes:

   High Pressure Pump & Roller Tappet:

   - Refer to TSB ENG083 for special attention and handling procedures of GDI-specific components.
   - When installing the high pressure pump and roller tappet onto the new engine, apply engine oil to the roller tappet, and O-rings of the high pressure pump.



   Tightening torques of pump bolts:
   9.4 – 10.9 lb.ft (12.8 – 14.7 N.m, 1.3 – 1.5 kgf.m)

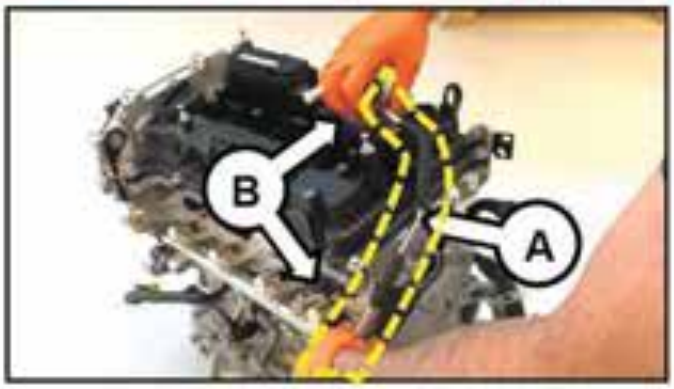
   Tightening torques of pipe flare nut:
   19.5 – 23.9 lb.ft (26.5 – 32.4 N.m, 2.7 – 3.3 kgf.m)

★ NOTICE

Refer to TSB ENG083 for gasoline direct injection (GDI) specific information, including related warnings and cautions for handling high fuel pressure system components.

High Pressure Fuel Pipe:

1. Properly position the new fuel pipe (A) and then hand-tighten both flare nuts (B).



2. Install the pipe retaining bracket and bolt (C) and torque to specifications.

★ NOTICE

If the bracket and bolt are missing, order and install a new bracket and bolt.

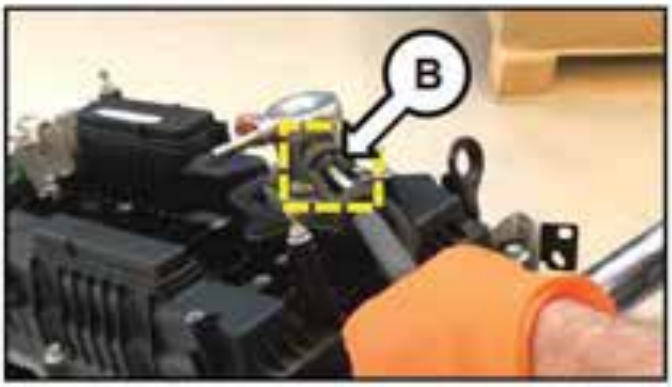
Tightening torque (bracket bolt):
5.8 – 8.7 lb.ft (7.8 –11.8 N.m, 0.8 – 1.2 kgf.m)



3. Using a click-type/electronic torque wrench and SST 09314-3Q100, torque both flare nuts (B) to specifications.

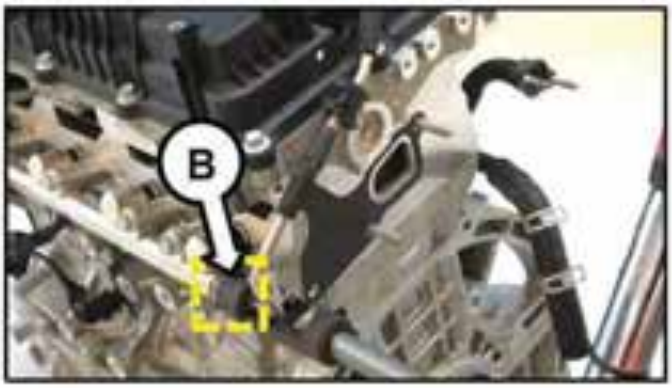
Tightening torque (flare nuts):
19.5 – 23.9 lb.ft (26.5 – 32.4 N.m, 2.7 – 3.3 kgf.m)

Click here to see a video tutorial of high pressure fuel pipe install (includes high pressure pump install).



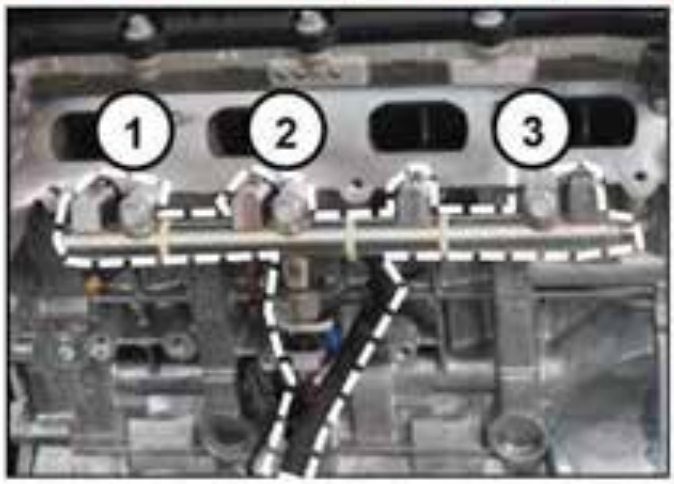
★ IMPORTANT

The high pressure fuel pipe bracket and bolt must be installed and properly torqued prior to torqueing the high pressure fuel pipe flare nuts.



Delivery Pipe:

- Refer to TSB ENG083 for special attention and handling procedures of GDI-specific components.
- Prior to installing the delivery pipe, be sure to replace all of the injector O-rings and injector retainers.
- Prior to installing the delivery pipe, apply engine oil to the injector O-rings.
- When installing the delivery pipe, use caution not to damage the tip of the injector.
- Be sure to replace the delivery pipe retaining bolts and torque them in the sequence shown.



Tightening torque of bolts:
13.7 – 17.4 lb.ft (18.6 – 23.5 N.m, 1.9 – 2.4 kgf.m)

*** NOTICE**

Combustion seals must be compressed after installation and before attempting to install into the cylinder head. Use SST 09353 2B000 (refer to TSB ENG083).

Dipstick Tube & Dipstick:

- Prior to installing the new tube, lubricate the o-ring located at the bottom of the tube with engine oil.
- Install the red dipstick included in Service Kit I.

Tightening torque of bolt:
5.8 – 8.7 lb.ft (7.8 – 11.8 N.m, 0.8 - 1.2 kgf.m)



Intake Manifold:

- Prior to installation, replace the intake manifold gaskets.
- Torque bolts in the sequence shown.

Tightening torque of bolts:
13.7 – 17.4 lb.ft (18.6 – 23.5 N.m, 1.9 – 2.4 kgf.m)

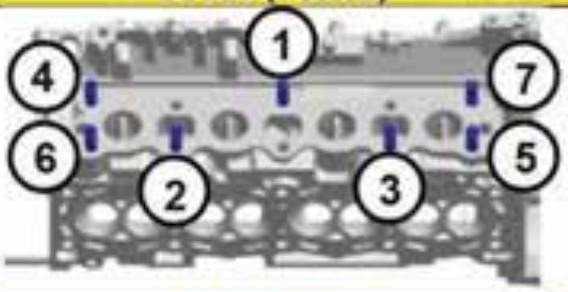


Exhaust Manifold:

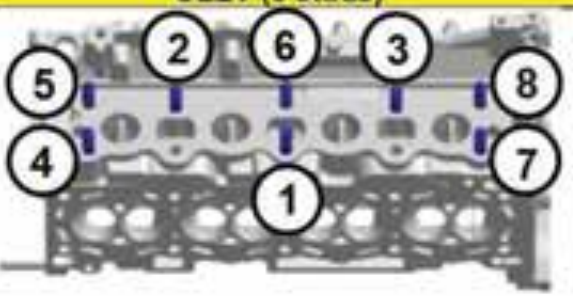
- All engines supplied under this Product Improvement Campaign have the exhaust manifold studs configured for SULEV engines.
- Using the pictures to the right, check the exhaust manifold stud location and quantity. Relocate as required for ULEV engines and obtain one (1) extra from the removed engine.
- Prior to installation, replace the exhaust manifold gasket and front muffler gasket.
- Torque nuts in the sequence shown.

Tightening torque of nuts:
36.2 – 39.7 lb.ft (49.0 – 53.9 N.m, 5.0 – 5.5 kgf.m)

SULEV (7 studs)



ULEV (8 studs)

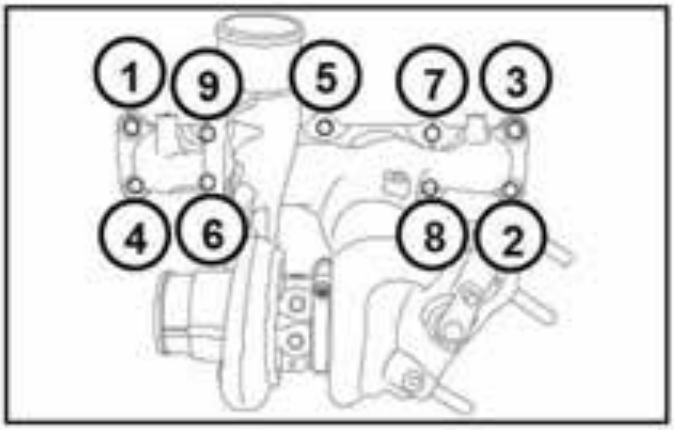


***For 15MY Sorento (XMa) vehicles only: check the underhood emissions label and record whether the label references ULEV or SULEV. This information is needed to select/order the correct replacement engine.**



- On Turbo engines, replace the turbocharger oil feed line and gaskets.

Tightening torque of oil feed line bolt:
8.7 – 13.0 lb.ft (11.8 – 17.7 N.m, 1.2 – 1.8 kgf.m)
Tightening torque of oil feed line nuts:
5.8 – 8.7 lb.ft (7.8 – 11.8 N.m, 0.8 – 1.2 kgf.m)
Tightening torque of oil drain line nuts and bolts:
5.8 – 8.7 lb.ft (7.8 – 11.8 N.m, 0.8 – 1.2 kgf.m)



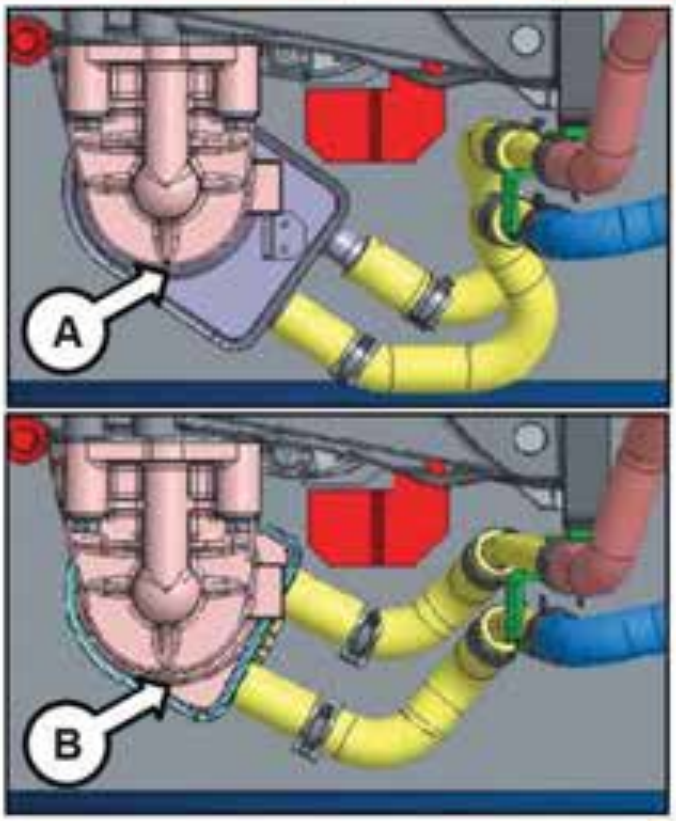
- Torque exhaust manifold nuts in the sequence shown.

Tightening torque of nuts:
36.2 – 39.7 lb.ft (49.0 – 53.9 N.m, 5.0 – 5.5 kgf.m)

Oil Cooler Tube Assembly:

New engines may be supplied with a different oil cooler. Use steps below to determine the need for a replacement oil cooler tube assembly.

- If the new engine's (bigger) oil cooler (A) does not match the old engine's (smaller) oil cooler (B), replace the oil cooler tube assembly with the improved part. See parts table on page 24.
- If the new engine's (bigger) oil cooler (A) matches the old engine's (bigger) oil cooler (A), reuse the old engine's oil cooler tube assembly.
- If the new engine's (smaller) oil cooler (B) matches the old engine's (smaller) oil cooler (B), reuse the old engine's oil cooler tube assembly.



Drive Plate Bolts:

- Replace all seven (7) drive plate (AT) bolts.

Tightening torque of nuts:
86.8 – 93.9 lb.ft (117.7 – 125.5 N.m, 12.0 – 13.0 kgf.m)



Drive Plate Bolt (A/T)

Torque Converter

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


Not Fully Inserted


Fully Inserted

5. Reinstall the assembled engine and transmission/transaxle into the vehicle.

   Be sure to:

   - Fill crankcase with 5W-30 oil (~5.8 quarts).
   - Fill and bleed the cooling system with 50/50 coolant or mixture appropriate for area.
   - Pressurize the fuel system before starting the vehicle.
   - Reset engine adaptive values and perform steering angle sensor calibration.

   Refer to TSB ENG190 for information regarding engine replacement practices.

6. Verify proper operation of the vehicle with road test, and **with the engine ON (running), erase any stored DTCs** (e.g., EPS, ESC, and TPMS) that may have been set by this procedure. Verify no leaks exist and ensure engine oil and coolant are at their proper level.

   If any DTCs are still active, follow any related diagnosis and repair as needed.

SUBJECT: ENGINE REPLACEMENT INSTRUCTIONS FOR DTC P1326 (PI1802W/X)

AFFECTED VEHICLE RANGE:

Model	Production Date Range
14MY Optima (TF)	August 29, 2013 through April 25, 2014
15-18MY Optima (TF/QF/JF/JFa)	April 16, 2014 through July 11, 2018
14-18MY Sportage (SL/QL)	September 30, 2013 through April 5, 2018
15-18MY Sorento (XMa/UMa)	January 3, 2014 through March 7, 2018

REQUIRED TOOL:

Tool Name	Tool Part No.	Figure	Comments
Torque Wrench Socket	09314 3Q100		Refer to TSB ENG063 for detailed usage instructions
Injector Combustion Seal Ring Installer	09353 2B000		
Pin Tool	91400 00000QQK		Auto-shipped to Dealers in 10/2018. Replacements can be ordered through Mobis Parts America.
Click-Type or Electronic Torque Wrench	N/A		Locally Sourced
Engine Noise Tester SST	GIT1XTDCP005		Auto-shipped to Dealers in June 2017 for SC147. For replacements, contact Snap-On Business Solutions at (888) 542-1011.

REQUIRED PARTS:

Part Name	MY	Model	Part Number		Figure
			2.4L GDI	2.0L T-GDI	
Engine Long Block	14-15	TF	21101 2GK06QQKR	-	
	14-16	SL	21101 2GK36QQKR	21101 2GK37QQKR	
	15	QF	21101 2GK06QQKR	21101 2GK08QQKR	
		XMa ULEV & SULEV	21101 2GK11QQKR	-	
	17-18	QL	21101 2GK35QQKR	21101 2GK39QQKR	
	16-17	UMa	21101 2GK31QQKR	21101 2GK32QQKR	
	18		21101 2GK33QQKR		
	16-18	JF, JFa	21101 2GK34QQKR	21101 2GK32QQKR	

Models	Part Name	Engine	Part Number	Figure
TF, SL, QF, XMa	Service Kit I	2.4L GDI	21111 2GK50QQK	
		2.0L T-GDI	21111 2GK60QQK	

SUBJECT: ENGINE REPLACEMENT INSTRUCTIONS FOR DTC P1326 (PI1802W/X)

Models	Part Name	Engine	Part Number	Figure
UMa, QL, JF, JFa	Service Kit I	2.4L GDI	21111 2GK51QQK	
		2.0L T-GDI	21111 2GK52QQK	
TF, SL, QF, XMa	Service Kit II	2.4L GDI and 2.0L T-GDI	21111 2GK70QQK	
UMa, QL, JF, JFa		2.4L GDI	21111 2GK71QQK	
		2.0L T-GDI	21111 2GK72QQK	
TF, SL, QF, XMa	KS Extension Harness	2.4L GDI and 2.0L T-GDI	*91400 2T100QQK	
UMa, QL, JF, JFa		2.4L GDI and 2.0L T-GDI	91400 2T010QQK	
All	Drive Plate Bolts	2.4L GDI and 2.0L T-GDI	23311 25050	
	Oil Cooler Tube Assembly (replacement is conditional, refer to page 21)	2.4L GDI	25470 2G050QQK	
		2.0L T-GDI	25470 2G650QQK	

***NOTE: Old part number 91400 2T000QQK has been superseded by new part number 91400 2T100QQK.**

SUBJECT: ENGINE REPLACEMENT INSTRUCTIONS FOR DTC P1326 (PI1802W/X)

WARRANTY INFORMATION (PI1802**W1**, MIL ON WITH P1326):

N Code: N99 C Code: C99

Model	Claim Type	Causal P/N	Qty.	Repair Description	Labor Op Code	Op Time	Replacement P/N	Qty.
Scr. (XMa) 2.4L	R	21020 2G010	0	(PI1802**W1**) 2.4L GDI 2WD MIL ON with P1326, KSDS Wire Harness Inspection Pass, Engine Noise Inspection Pass, & KSDS Extension Harness Install	180A12R4	1.1 M/H	*91400 2T100QQK	1
				(PI1802**W1**) 2.4L GDI 2WD MIL ON with P1326, KSDS Wire Harness Inspection Pass, Engine Noise Inspection Fail, & Engine Replacement	180A12R0	8.7 M/H	21111 2GK50QQKR	1
							21111 2GK70QQKR	1
							23311 25050	7
							(ULEV or SULEV) 21101 2GK11QQKRR	1
				(PI1802**W1**) 2.4L GDI 2WD MIL ON with P1326, KSDS Wire Harness Inspection Fail, KSDS Extension Harness Install	180A12R2	0.8 M/H	*91400 2T100QQK	1
				(PI1802**W1**) 2.4L GDI AWD MIL ON with P1326, KSDS Wire Harness Inspection Pass, Engine Noise Inspection Pass, & KSDS Extension Harness Install	180A12R5	1.1 M/H	*91400 2T100QQK	1
				(PI1802**W1**) 2.4L GDI AWD MIL ON with P1326, KSDS Wire Harness Inspection Pass, Engine Noise Inspection Fail, & Engine Replacement	180A12R1	8.9 M/H	21111 2GK50QQK	1
							21111 2GK70QQK	1
							23311 25050	7
							(ULEV or SULEV) 21101 2GK11QQKR	1
				(PI1802**W1**) 2.4L GDI AWD MIL ON with P1326, KSDS Wire Harness Inspection Fail, KSDS Extension Harness Install	180A12R3	0.8 M/H	*91400 2T100QQK	1

***NOTE: Old part number 91400 2T000QQK has been superseded by new part number 91400 2T100QQK.**

SUBJECT: ENGINE REPLACEMENT INSTRUCTIONS FOR DTC P1326 (PI1802W/X)

Model	Claim Type	Causal P/N	Qty.	Repair Description	Labor Op Code	Op Time	Replacement P/N	Qty.
Opt. (QF) 2.4L	R	23060 2G400	0	(PI1802W1) 2.4L GDI MIL ON with P1326, KSDS Wire Harness Inspection Pass, Engine Noise Inspection Pass, & KSDS Extension Harness Install	180A16R5	1.1 M/H	*91400 2T100QQK	1
				(PI1802W1) 2.4L GDI MIL ON with P1326, KSDS Wire Harness Inspection Pass, Engine Noise Inspection Fail, & Engine Replacement	180A16R1	8.7 M/H	21111 2GK50QQK	1
							21111 2GK70QQK	1
							23311 25050	7
							21101 2GK06QQKR	1
				(PI1802W1) 2.4L GDI MIL ON with P1326, KSDS Wire Harness Inspection Fail, KSDS Extension Harness Install	180A16R3	0.8 M/H	*91400 2T100QQK	1
Opt. (QF) 2.0L T	R	23060 2G400	0	(PI1802W1) 2.0L T-GDI MIL ON with P1326, KSDS Wire Harness Inspection Pass, Engine Noise Inspection Pass, & KSDS Extension Harness Install	180A16R4	1.1 M/H	*91400 2T100QQK	1
				(PI1802W1) 2.0L T-GDI MIL ON with P1326, KSDS Wire Harness Inspection Pass, Engine Noise Inspection Fail, & Engine Replacement	180A16R0	8.9 M/H	21111 2GK60QQK	1
							21111 2GK70QQK	1
							23311 25050	7
							21101 2GK06QQKR	1
				(PI1802W1) 2.0L T-GDI MIL ON with P1326, KSDS Wire Harness Inspection Fail, KSDS Extension Harness Install	180A16R2	0.8 M/H	*91400 2T100QQK	1
Opt. (TF) 2.4L	R	23060 2G400	0	(PI1802W1) 2.4L GDI MIL ON with P1326, KSDS Wire Harness Inspection Pass, Engine Noise Inspection Pass, & KSDS Extension Harness Install	180111RK	1.1 M/H	*91400 2T100QQK	1
				(PI1802W1) 2.4L GDI MIL ON with P1326, KSDS Wire Harness Inspection Pass, Engine Noise Inspection Fail, & Engine Replacement	180111R0	8.7 M/H	21111 2GK50QQK	1
							21111 2GK70QQK	1
							23311 25050	7
							21101 2GK06QQKR	1
				(PI1802W1) 2.4L GDI MIL ON with P1326, KSDS Wire Harness Inspection Fail, KSDS Extension Harness Install	180111R5	0.8 M/H	*91400 2T100QQK	1

***NOTE: Old part number 91400 2T000QQK has been superseded by new part number 91400 2T100QQK.**

SUBJECT: ENGINE REPLACEMENT INSTRUCTIONS FOR DTC P1326 (PI1802W/X)

Model	Claim Type	Causal P/N	Qty.	Repair Description	Labor Op Code	Op Time	Replacement P/N	Qty.
Spo. (SL) 2.4L	R	23060 2G400	0	(PI1802W1) 2.4L GDI 2WD MIL ON with P1326, KSDS Wire Harness Inspection Pass, Engine Noise Inspection Pass, & KSDS Extension Harness Install	180112RK	1.2 M/H	*91400 2T100QQK	1
				(PI1802W1) 2.4L GDI 2WD MIL ON with P1326, KSDS Wire Harness Inspection Pass, Engine Noise Inspection Fail, & Engine Replacement	180112R0	8.0 M/H	21111 2GK50QQK	1
							21111 2GK70QQK	1
							23311 25050	7
							21101 2GK36QQKR	1
				(PI1802W1) 2.4L GDI 2WD MIL ON with P1326, KSDS Wire Harness Inspection Fail, KSDS Extension Harness Install	180112R5	0.9 M/H	*91400 2T100QQK	1
				(PI1802W1) 2.4L GDI AWD MIL ON with P1326, KSDS Wire Harness Inspection Pass, Engine Noise Inspection Pass, & KSDS Extension Harness Install	180112RM	1.2 M/H	*91400 2T100QQK	1
				(PI1802W1) 2.4L GDI AWD MIL ON with P1326, KSDS Wire Harness Inspection Pass, Engine Noise Inspection Fail, & Engine Replacement	180112R2	8.4 M/H	21111 2GK50QQK	1
							21111 2GK70QQK	1
							23311 25050	7
							21101 2GK36QQKR	1
				(PI1802W1) 2.4L GDI AWD MIL ON with P1326, KSDS Wire Harness Inspection Fail, KSDS Extension Harness Install	180112R7	0.9 M/H	*91400 2T100QQK	1

***NOTE: Old part number 91400 2T000QQK has been superseded by new part number 91400 2T100QQK.**

SUBJECT: ENGINE REPLACEMENT INSTRUCTIONS FOR DTC P1326 (PI1802W/X)

Model	Claim Type	Causal P/N	Qty.	Repair Description	Labor Op Code	Op Time	Replacement P/N	Qty.
Spo. (SL) 2.0L T	R	23060 2G400	0	(PI1802W1) 2.0L T-GDI 2WD MIL ON with P1326, KSDS Wire Harness Inspection Pass, Engine Noise Inspection Pass, & KSDS Extension Harness Install	180112RN	1.2 M/H	*91400 2T100QQK	1
				(PI1802W1) 2.0L T-GDI 2WD MIL ON with P1326, KSDS Wire Harness Inspection Pass, Engine Noise Inspection Fail, & Engine Replacement	180112R3	8.0 M/H	21111 2GK60QQK	1
							21111 2GK70QQK	1
							23311 25050	7
							21101 2GK37QQKR	1
				(PI1802W1) 2.0L T-GDI 2WD MIL ON with P1326, KSDS Wire Harness Inspection Fail, KSDS Extension Harness Install	180112R8	0.9 M/H	*91400 2T100QQK	1
				(PI1802W1) 2.0L T-GDI AWD MIL ON with P1326, KSDS Wire Harness Inspection Pass, Engine Noise Inspection Pass, & KSDS Extension Harness Install	180112RO	1.2 M/H	*91400 2T100QQK	1
				(PI1802W1) 2.0L T-GDI AWD MIL ON with P1326, KSDS Wire Harness Inspection Pass, Engine Noise Inspection Fail, & Engine Replacement	180112R4	8.4 M/H	21111 2GK60QQK	1
							21111 2GK70QQK	1
							23311 25050	7
							21101 2GK37QQKR	1
				(PI1802W1) 2.0L T-GDI AWD MIL ON with P1326, KSDS Wire Harness Inspection Fail, KSDS Extension Harness Install	180112R9	0.9 M/H	*91400 2T100QQK	1

***NOTE: Old part number 91400 2T000QQK has been superseded by new part number 91400 2T100QQK.**

SUBJECT: ENGINE REPLACEMENT INSTRUCTIONS FOR DTC P1326 (PI1802W/X)

Model	Claim Type	Causal P/N	Qty.	Repair Description	Labor Op Code	Op Time	Replacement P/N	Qty.
Sor. (UMa) 2.4L	R	23060 2G401	0	(PI1802**W1**) 2.4L GDI 2WD MIL ON with P1326, KSDS Wire Harness Inspection Pass, Engine Noise Inspection Pass, & KSDS Extension Harness Install	180A32RJ	1.1 M/H	91400 2T010QQK	1
				(PI1802**W1**) 2.4L GDI 2WD MIL ON with P1326, KSDS Wire Harness Inspection Pass, Engine Noise Inspection Fail, & Engine Replacement	180A32R0	8.7 M/H	21111 2GK51QQK	1
							21111 2GK71QQK	1
							23311 25050	7
							(16-17MY) 21101 2GK31QQKR	1
							(18MY) 21101 2GK33QQKR	
				(PI1802**W1**) 2.4L GDI 2WD MIL ON with P1326, KSDS Wire Harness Inspection Fail, KSDS Extension Harness Install	180A32R4	0.8 M/H	91400 2T010QQK	1
				(PI1802**W1**) 2.4L GDI AWD MIL ON with P1326, KSDS Wire Harness Inspection Pass, Engine Noise Inspection Pass, & KSDS Extension Harness Install	180A32RK	1.1 M/H	91400 2T010QQK	1
				(PI1802**W1**) 2.4L GDI AWD MIL ON with P1326, KSDS Wire Harness Inspection Pass, Engine Noise Inspection Fail, & Engine Replacement	180A32R1	9.0 M/H	21111 2GK51QQK	1
							21111 2GK71QQK	1
							23311 25050	7
							(16-17MY) 21101 2GK31QQKR	1
							(18MY) 21101 2GK33QQKR	
				(PI1802**W1**) 2.4L GDI AWD MIL ON with P1326, KSDS Wire Harness Inspection Fail, KSDS Extension Harness Install	180A32R5	0.8 M/H	91400 2T010QQK	1

SUBJECT: ENGINE REPLACEMENT INSTRUCTIONS FOR DTC P1326 (PI1802W/X)

Model	Claim Type	Causal P/N	Qty.	Repair Description	Labor Op Code	Op Time	Replacement P/N	Qty.
Sor. (UMa) 2.0L T	R	23060 2G401	0	(PI1802W1) 2.0L T-GDI 2WD MIL ON with P1326, KSDS Wire Harness Inspection Pass, Engine Noise Inspection Pass, & KSDS Extension Harness Install	180A32RL	1.1 M/H	91400 2T010QQK	1
				(PI1802W1) 2.0L T-GDI 2WD MIL ON with P1326, KSDS Wire Harness Inspection Pass, Engine Noise Inspection Fail, & Engine Replacement	180A32R2	8.7 M/H	21111 2GK52QQK	1
							21111 2GK72QQK	1
							23311 25050	7
							21101 2GK32QQKR	1
				(PI1802W1) 2.0L T-GDI 2WD MIL ON with P1326, KSDS Wire Harness Inspection Fail, KSDS Extension Harness Install	180A32R6	0.8 M/H	91400 2T010QQK	1
				(PI1802W1) 2.0L T-GDI AWD MIL ON with P1326, KSDS Wire Harness Inspection Pass, Engine Noise Inspection Pass, & KSDS Extension Harness Install	180A32RM	1.1 M/H	91400 2T010QQK	1
				(PI1802W1) 2.0L T-GDI AWD MIL ON with P1326, KSDS Wire Harness Inspection Pass, Engine Noise Inspection Fail, & Engine Replacement	180A32R3	9.0 M/H	21111 2GK52QQK	1
							21111 2GK72QQK	1
							23311 25050	7
							21101 2GK32QQKR	1
				(PI1802W1) 2.0L T-GDI AWD MIL ON with P1326, KSDS Wire Harness Inspection Fail, KSDS Extension Harness Install	180A32R7	0.8 M/H	91400 2T010QQK	1

SUBJECT: ENGINE REPLACEMENT INSTRUCTIONS FOR DTC P1326 (PI1802W/X)

Model	Claim Type	Causal P/N	Qty.	Repair Description	Labor Op Code	Op Time	Replacement P/N	Qty.
Spo. (QL) 2.4L	R	23060 2G401	0	(PI1802W1) 2.4L GDI 2WD MIL ON with P1326, KSDS Wire Harness Inspection Pass, Engine Noise Inspection Pass, & KSDS Extension Harness Install	180114RK	1.1 M/H	91400 2T010QQK	1
				(PI1802W1) 2.4L GDI 2WD MIL ON with P1326, KSDS Wire Harness Inspection Pass, Engine Noise Inspection Fail, & Engine Replacement	180114R0	8.7 M/H	21111 2GK51QQK	1
							21111 2GK71QQK	1
							23311 25050	7
							21101 2GK35QQKR	1
				(PI1802W1) 2.4L GDI 2WD MIL ON with P1326, KSDS Wire Harness Inspection Fail, KSDS Extension Harness Install	180114R5	0.8 M/H	91400 2T010QQK	1
				(PI1802W1) 2.4L GDI AWD MIL ON with P1326, KSDS Wire Harness Inspection Pass, Engine Noise Inspection Pass, & KSDS Extension Harness Install	180114RM	1.1 M/H	91400 2T010QQK	1
				(PI1802W1) 2.4L GDI AWD MIL ON with P1326, KSDS Wire Harness Inspection Pass, Engine Noise Inspection Fail, & Engine Replacement	180114R2	9.0 M/H	21111 2GK51QQK	1
							21111 2GK71QQK	1
							23311 25050	7
							21101 2GK35QQKR	1
				(PI1802W1) 2.4L GDI AWD MIL ON with P1326, KSDS Wire Harness Inspection Fail, KSDS Extension Harness Install	180114R7	0.8 M/H	91400 2T010QQK	1

SUBJECT: ENGINE REPLACEMENT INSTRUCTIONS FOR DTC P1326 (PI1802W/X)

Model	Claim Type	Causal P/N	Qty.	Repair Description	Labor Op Code	Op Time	Replacement P/N	Qty.
Spo. (QL) 2.0L T	R	23060 2G401	0	(PI1802W1) 2.0L T-GDI 2WD MIL ON with P1326, KSDS Wire Harness Inspection Pass, Engine Noise Inspection Pass, & KSDS Extension Harness Install	180114RN	1.1 M/H	91400 2T010QQK	1
				(PI1802W1) 2.0L T-GDI 2WD MIL ON with P1326, KSDS Wire Harness Inspection Pass, Engine Noise Inspection Fail, & Engine Replacement	180114R3	8.7 M/H	21111 2GK52QQK	1
							21111 2GK72QQK	1
							23311 25050	7
							21101 2GK39QQKR	1
				(PI1802W1) 2.0L T-GDI 2WD MIL ON with P1326, KSDS Wire Harness Inspection Fail, KSDS Extension Harness Install	180114R8	0.8 M/H	91400 2T010QQK	1
				(PI1802W1) 2.0L T-GDI AWD MIL ON with P1326, KSDS Wire Harness Inspection Pass, Engine Noise Inspection Pass, & KSDS Extension Harness Install	180114RO	1.1 M/H	91400 2T010QQK	1
				(PI1802W1) 2.0L T-GDI AWD MIL ON with P1326, KSDS Wire Harness Inspection Pass, Engine Noise Inspection Fail, & Engine Replacement	180114R4	9.0 M/H	21111 2GK52QQK	1
							21111 2GK72QQK	1
							23311 25050	7
							21101 2GK39QQKR	1
				(PI1802W1) 2.0L T-GDI AWD MIL ON with P1326, KSDS Wire Harness Inspection Fail, KSDS Extension Harness Install	180114R9	0.8 M/H	91400 2T010QQK	1

SUBJECT: ENGINE REPLACEMENT INSTRUCTIONS FOR DTC P1326 (PI1802W/X)

Model	Claim Type	Causal P/N	Qty.	Repair Description	Labor Op Code	Op Time	Replacement P/N	Qty.
Opt. (JF) 2.4L	R	23060 2G401	0	(PI1802W1) 2.4L GDI MIL ON with P1326, KSDS Wire Harness Inspection Pass, Engine Noise Inspection Pass, & KSDS Extension Harness Install	180113RK	1.1 M/H	91400 2T010QQK	1
				(PI1802W1) 2.4L GDI MIL ON with P1326, KSDS Wire Harness Inspection Pass, Engine Noise Inspection Fail, & Engine Replacement	180113R0	8.7 M/H	21111 2GK51QQK	1
							21111 2GK71QQK	1
							23311 25050	7
							21101 2GK34QQKR	1
				(PI1802W1) 2.4L GDI MIL ON with P1326, KSDS Wire Harness Inspection Fail, KSDS Extension Harness Install	180113R5	0.8 M/H	91400 2T010QQK	1
Opt. (JFa) 2.4L	R	23060 2G401	0	(PI1802W1) 2.4L GDI MIL ON with P1326, KSDS Wire Harness Inspection Pass, Engine Noise Inspection Pass, & KSDS Extension Harness Install	180A33R4	1.1 M/H	91400 2T010QQK	1
				(PI1802W1) 2.4L GDI MIL ON with P1326, KSDS Wire Harness Inspection Pass, Engine Noise Inspection Fail, & Engine Replacement	180A33R0	8.7 M/H	21111 2GK51QQK	1
							21111 2GK71QQK	1
							23311 25050	7
							21101 2GK34QQKR	1
				(PI1802W1) 2.4L GDI MIL ON with P1326, KSDS Wire Harness Inspection Fail, KSDS Extension Harness Install	180A33R2	0.8 M/H	91400 2T010QQK	1
Opt. (JFa) 2.0L T	R	23060 2G401	0	(PI1802W1) 2.0L T-GDI MIL ON with P1326, KSDS Wire Harness Inspection Pass, Engine Noise Inspection Pass, & KSDS Extension Harness Install	180A33R5	1.1 M/H	91400 2T010QQK	1
				(PI1802W1) 2.0L T-GDI MIL ON with P1326, KSDS Wire Harness Inspection Pass, Engine Noise Inspection Fail, & Engine Replacement	180A33R1	8.7 M/H	21111 2GK52QQK	1
							21111 2GK72QQK	1
							23311 25050	7
							21101 2GK32QQKR	1
				(PI1802W1) 2.0L T-GDI MIL ON with P1326, KSDS Wire Harness Inspection Fail, KSDS Extension Harness Install	180A33R3	0.8 M/H	91400 2T010QQK	1

SUBJECT: ENGINE REPLACEMENT INSTRUCTIONS FOR DTC P1326 (PI1802W/X)

WARRANTY INFORMATION (PI1802X1, ENGINE SEIZED/SEVERE KNOCKING):

N Code: N99 C Code: C99

Model	Claim Type	Causal P/N	Qty.	Repair Description	Labor Op Code	Op Time	Replacement P/N	Qty.
Sor. (XMa) 2.4L	R	21020 2G010	0	(PI1802X1) 2.4L GDI 2WD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Pass	180A12R8	8.4 M/H	21111 2GK50QQK	1
							21111 2GK70QQK	1
							23311 25050	7
							(ULEV or SULEV) 21101 2GK11QQKR	1
				(PI1802X1) 2.4L GDI 2WD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Fail, KSDS Wire Harness Install	180A12RA	8.9 M/H	21111 2GK50QQK	1
							21111 2GK70QQK	1
							23311 25050	7
							(ULEV or SULEV) 21101 2GK11QQKR	1
							*91400 2T100QQK	1
				(PI1802X1) 2.4L GDI AWD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Pass	180A12R9	8.6 M/H	21111 2GK50QQK	1
							21111 2GK70QQK	1
							23311 25050	7
							(ULEV or SULEV) 21101 2GK11QQKR	1
				(PI1802X1) 2.4L GDI AWD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Fail, KSDS Wire Harness Install	180A12RB	9.1 M/H	21111 2GK50QQK	1
							21111 2GK70QQK	1
							23311 25050	7
							(ULEV or SULEV) 21101 2GK11QQKR	1
							*91400 2T100QQK	1

***NOTE: Old part number 91400 2T000QQK has been superseded by new part number 91400 2T100QQK.**

SUBJECT: ENGINE REPLACEMENT INSTRUCTIONS FOR DTC P1326 (PI1802W/X)

Model	Claim Type	Causal P/N	Qty.	Repair Description	Labor Op Code	Op Time	Replacement P/N	Qty.
Opt. (QF) 2.4L	R	23060 2G400	0	(PI1802X1) 2.4L GDI Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Pass	180A16R9	8.4 M/H	21111 2GK50QGK	1
							21111 2GK70QGK	1
							23311 25050	7
							21101 2GK06QGKR	1
				(PI1802X1) 2.4L GDI Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Fail, KSDS Wire Harness Install	180A16RB	8.9 M/H	21111 2GK50QGK	1
							21111 2GK70QGK	1
							23311 25050	7
							21101 2GK06QGKR	1
							*91400 2T100QGK	1
Opt. (QF) 2.0L T	R	23060 2G400	0	(PI1802X1) 2.0L T-GDI Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Pass	180A16R8	8.7 M/H	21111 2GK60QGK	1
							21111 2GK70QGK	1
							23311 25050	7
							21101 2GK06QGKR	1
				(PI1802X1) 2.0L T-GDI Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Fail, KSDS Wire Harness Install	180A16RA	9.2 M/H	21111 2GK60QGK	1
							21111 2GK70QGK	1
							23311 25050	7
							21101 2GK06QGKR	1
							*91400 2T100QGK	1
Opt. (TF) 2.4L	R	23060 2G400	0	(PI1802X1) 2.4L GDI Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Pass	18D111RA	8.4 M/H	21111 2GK50QGK	1
							21111 2GK70QGK	1
							23311 25050	7
							21101 2GK06QGKR	1
				(PI1802X1) 2.4L GDI Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Fail, KSDS Wire Harness Install	18D111RF	8.9 M/H	21111 2GK50QGK	1
							21111 2GK70QGK	1
							23311 25050	7
							21101 2GK06QGKR	1
							*91400 2T100QGK	1

***NOTE: Part number 91400 2T000QGK has been superseded by a new part number 91400 2T100QGK.**

SUBJECT: ENGINE REPLACEMENT INSTRUCTIONS FOR DTC P1326 (PI1802W/X)

Model	Claim Type	Causal P/N	Qty.	Repair Description	Labor Op Code	Op Time	Replacement P/N	Qty.
Spo. (SL) 2.4L	R	23060 2G400	0	(PI1802**X1**) 2.4L GDI 2WD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Pass	180112RA	7.7 M/H	21111 2GK50QGK	1
							21111 2GK70QGK	1
							23311 25050	7
							21101 2GK36QGKR	1
				(PI1802**X1**) 2.4L GDI 2WD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Fail, KSDS Wire Harness Install	180112RF	8.3 M/H	21111 2GK50QGK	1
							21111 2GK70QGK	1
							23311 25050	7
							21101 2GK36QGKR	1
							*91400 2T100QGK	1
				(PI1802**X1**) 2.4L GDI AWD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Pass	180112RC	8.1 M/H	21111 2GK50QGK	1
							21111 2GK70QGK	1
							23311 25050	7
							21101 2GK36QGKR	1
				(PI1802**X1**) 2.4L GDI AWD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Fail, KSDS Wire Harness Install	180112RH	8.7 M/H	21111 2GK50QGK	1
							21111 2GK70QGK	1
							23311 25050	7
							21101 2GK36QGKR	1
							*91400 2T100QGK	1
Spo. (SL) 2.0L T	R	23060 2G400	0	(PI1802**X1**) 2.0L T-GDI 2WD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Pass	180112RD	7.7 M/H	21111 2GK60QGK	1
							21111 2GK70QGK	1
							23311 25050	7
							21101 2GK37QGKR	1
				(PI1802**X1**) 2.0L T-GDI 2WD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Fail, KSDS Wire Harness Install	180112RI	8.3 M/H	21111 2GK60QGK	1
							21111 2GK70QGK	1
							23311 25050	7
							21101 2GK37QGKR	1
							*91400 2T100QGK	1
				(PI1802**X1**) 2.0L T-GDI AWD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Pass	180112RE	8.1 M/H	21111 2GK60QGK	1
							21111 2GK70QGK	1
							23311 25050	7
							21101 2GK37QGKR	1
				(PI1802**X1**) 2.0L T-GDI AWD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Fail, KSDS Wire Harness Install	180112RJ	8.7 M/H	21111 2GK60QGK	1
							21111 2GK70QGK	1
							23311 25050	7
							21101 2GK37QGKR	1
							*91400 2T100QGK	1

***NOTE: Old part number 91400 2T000QGK has been superseded by new part number 91400 2T100QGK.**

SUBJECT: ENGINE REPLACEMENT INSTRUCTIONS FOR DTC P1326 (PI1802W/X)

Model	Claim Type	Causal P/N	Qty.	Repair Description	Labor Op Code	Op Time	Replacement P/N	Qty.
Sor. (UMa) 2.4L	R	23060 2G401	0	(PI1802X1) 2.4L GDI 2WD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Pass	180A32RA	8.4 M/H	21111 2GK51QGK	1
							21111 2GK71QGK	1
							23311 25050	7
							(16-17MY) 21101 2GK31QGKR	1
							(18MY) 21101 2GK33QGKR	
				(PI1802X1) 2.4L GDI 2WD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Fail, KSDS Wire Harness Install	180A32RB	8.9 M/H	21111 2GK51QGK	1
							21111 2GK71QGK	1
							23311 25050	7
							(16-17MY) 21101 2GK31QGKR	1
							(18MY) 21101 2GK33QGKR	
							91400 2T010QGK	1
				(PI1802X1) 2.4L GDI AWD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Pass	180A32RE	8.7 M/H	21111 2GK51QGK	1
							21111 2GK71QGK	1
							23311 25050	7
							(16-17MY) 21101 2GK31QGKR	1
							(18MY) 21101 2GK33QGKR	
				(PI1802X1) 2.4L GDI AWD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Fail, KSDS Wire Harness Install	180A32RF	9.2 M/H	21111 2GK51QGK	1
							21111 2GK71QGK	1
							23311 25050	7
							(16-17MY) 21101 2GK31QGKR	1
							(18MY) 21101 2GK33QGKR	
							91400 2T010QGK	1
Sor. (UMa) 2.0L T	R	23060 2G401	0	(PI1802X1) 2.0L T-GDI 2WD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Pass	180A32RC	8.4 M/H	21111 2GK52QGK	1
							21111 2GK72QGK	1
							23311 25050	7
							21101 2GK32QGKR	1
				(PI1802X1) 2.0L T-GDI 2WD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Fail, KSDS Wire Harness Install	180A32RD	8.9 M/H	21111 2GK52QGK	1
							21111 2GK72QGK	1
							23311 25050	7
							21101 2GK32QGKR	1
							91400 2T010QGK	1
				(PI1802X1) 2.0L T-GDI AWD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Pass	180A32RG	8.7 M/H	21111 2GK52QGK	1
							21111 2GK72QGK	1
							23311 25050	7
							21101 2GK32QGKR	1
				(PI1802X1) 2.0L T-GDI AWD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Fail, KSDS Wire Harness Install	180A32RH	9.2 M/H	21111 2GK52QGK	1
							21111 2GK72QGK	1
							23311 25050	7
							21101 2GK32QGKR	1
							91400 2T010QGK	1

SUBJECT: ENGINE REPLACEMENT INSTRUCTIONS FOR DTC P1326 (PI1802W/X)

Model	Claim Type	Causal P/N	Qty.	Repair Description	Labor Op Code	Op Time	Replacement P/N	Qty.
Spo. (QL) 2.4L	R	23060 2G401	0	(PI1802X1) 2.4L GDI 2WD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Pass	180114RA	8.4 M/H	21111 2GK51QGK	1
							21111 2GK71QGK	1
							23311 25050	7
							21101 2GK35QGKR	1
				(PI1802X1) 2.4L GDI 2WD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Fail, KSDS Wire Harness Install	180114RF	8.9 M/H	21111 2GK51QGK	1
							21111 2GK71QGK	1
							23311 25050	7
							21101 2GK35QGKR	1
							91400 2T010QGK	1
				(PI1802X1) 2.4L GDI AWD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Pass	180114RC	8.7 M/H	21111 2GK51QGK	1
							21111 2GK71QGK	1
							23311 25050	7
							21101 2GK35QGKR	1
				(PI1802X1) 2.4L GDI AWD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Fail, KSDS Wire Harness Install	180114RH	9.2 M/H	21111 2GK51QGK	1
							21111 2GK71QGK	1
							23311 25050	7
							21101 2GK35QGKR	1
							91400 2T010QGK	1
Spo. (QL) 2.0L T	R	23060 2G401	0	(PI1802X1) 2.0L T-GDI 2WD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Pass	180114RD	8.4 M/H	21111 2GK52QGK	1
							21111 2GK72QGK	1
							23311 25050	7
							21101 2GK39QGKR	1
				(PI1802X1) 2.0L T-GDI 2WD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Fail, KSDS Wire Harness Install	180114RI	8.9 M/H	21111 2GK52QGK	1
							21111 2GK72QGK	1
							23311 25050	7
							21101 2GK39QGKR	1
							91400 2T010QGK	1
				(PI1802X1) 2.0L T-GDI AWD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Pass	180114RE	8.7 M/H	21111 2GK52QGK	1
							21111 2GK72QGK	1
							23311 25050	7
							21101 2GK39QGKR	1
				(PI1802X1) 2.0L T-GDI AWD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Fail, KSDS Wire Harness Install	180114RJ	9.2 M/H	21111 2GK52QGK	1
							21111 2GK72QGK	1
							23311 25050	7
							21101 2GK39QGKR	1
							91400 2T010QGK	1

SUBJECT: ENGINE REPLACEMENT INSTRUCTIONS FOR DTC P1326 (PI1802W/X)

Model	Claim Type	Causal P/N	Qty.	Repair Description	Labor Op Code	Op Time	Replacement P/N	Qty.
Opt. (JF) 2.4L	R	23060 2G401	0	(PI1802X1) 2.4L GDI Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Pass	18D113RA	8.4 M/H	21111 2GK51QGK	1
							21111 2GK71QGK	1
							23311 25050	7
							21101 2GK34QGKR	1
				(PI1802X1) 2.4L GDI Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Fail, KSDS Wire Harness Install	18D113RF	8.9 M/H	21111 2GK51QGK	1
							21111 2GK71QGK	1
							23311 25050	7
							21101 2GK34QGKR	1
							91400 2T010QGK	1
Opt. (JFa) 2.4L	R	23060 2G401	0	(PI1802X1) 2.4L GDI Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Pass	18A33RA	8.4 M/H	21111 2GK51QGK	1
							21111 2GK71QGK	1
							23311 25050	7
							21101 2GK34QGKR	1
				(PI1802X1) 2.4L GDI Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Fail, KSDS Wire Harness Install	18A33RB	8.9 M/H	21111 2GK51QGK	1
							21111 2GK71QGK	1
							23311 25050	7
							21101 2GK34QGKR	1
							91400 2T010QGK	1
Opt. (JFa) 2.0L T	R	23060 2G401	0	(PI1802X1) 2.0L T-GDI Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Pass	18A33RC	8.7 M/H	21111 2GK52QGK	1
							21111 2GK72QGK	1
							23311 25050	7
							21101 2GK32QGKR	1
				(PI1802X1) 2.0L T-GDI Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Fail, KSDS Wire Harness Install	18A33RD	9.2 M/H	21111 2GK52QGK	1
							21111 2GK72QGK	1
							23311 25050	7
							21101 2GK32QGKR	1
							91400 2T010QGK	1

NOTE: Refer to Warranty Bulletin 2018-10 for details regarding coolant and substitute transportation reimbursement requirements.

Old part number 91400 2T000QGK has been superseded by new part number 91400 2T100QGK. See Parts Bulletin 91-914 0003 for details.

Use sublet code 'X3' with a maximum allowed amount of $19.80 for "ENGINE R&R" engine oil reimbursement.

If the replacement of the Oil Cooler Tube Assembly was required, please manually enter the applicable Oil Cooler Tube Assembly part number to the claim's related parts section.

Dispose of old parts in accordance with local, state, and Federal regulations.

ALL claims for engine or harness replacement without the required diagnostic inspection/results or authorization are subject to claim chargeback/denial without exception.

★ NOTICE

VIN inquiry data for this repair is provided for tracking purposes only. Kia retailers should reference PI1802W/X* when accessing the WebDCS system.

Appendix 1 (Warranty Claim Authorization)

	Scenario	Description	Action Required
1	Campaign - TSB # PI1802W/X Case for Warranty Authorization **NO INSPECTION**	Wiring Signal Interference Check cannot be completed due to engine seizure or other engine failure (won't run long enough to complete the test)	**TL PWA required for all dealers – Video of condition and WRTY143 form required*** Video requirement examples below are for illustration purposes, individual requirements will vary based upon the condition reported: • Video should be continuous and show the VIN (most convenient VIN plate) and pan to show the engine condition • For engine seizures, attempt to turn over engine with breaker bar in video • For hole in engine block, show hole in video

Appendix 2 (Video Capture & Upload)

Capturing a video is often helpful in assisting the Kia Techline Agent in determining a proper diagnosis strategy. Once a TechLine case is open, the following procedure will guide you through the video capture and upload.

The Chrome™ browser should be used to access the Techline portal. Follow the steps below to clear the default browser if it is other than Chrome™.

For KDS Tab 10.1 Tablets:

1. Select "Settings" from the App Screen.
2. Select the "General" tab at the top.
3. Select "Default Applications".
4. If "Internet" is the default browser, select the CLEAR button.

   If "Chrome" is the default browser, further action is not required.



5. When opening the Techline portal, select "Chrome" and select Always".



For KDS Tab S2 Tablets:

1. Select "Settings" from the App Screen.
2. Select "Applications".
3. Select "Default Applications".



4. Select "Browser app".



5. Ensure "Chrome" is selected.



Setting Your Video Size to "Limit to Email"

1. Select "Camera" from the App Screen.



2. Select the Settings icon.



3. Select the Video Camera icon.



4. Ensure "Limit to email" is selected.



Attaching Video to a Techline Case

1. Open K-Support in the device Chrome™ browser or select the "Techline" button on KDS home page.

   https://ksupport.kiausa.com



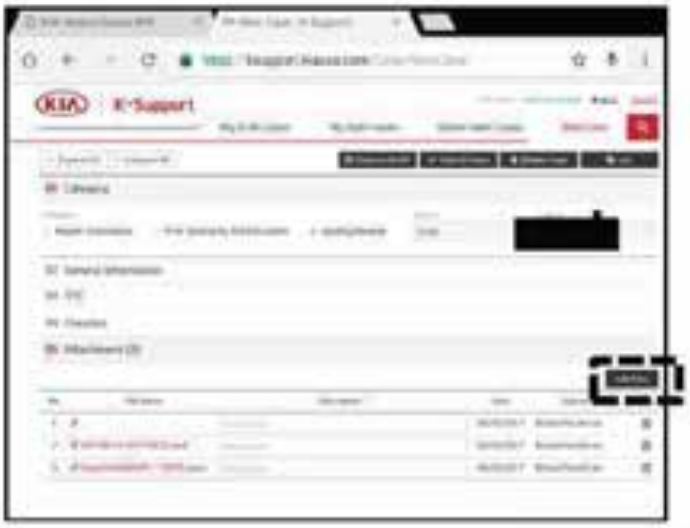
2. Open your existing Techline case for the vehicle requiring a video capture by selecting the case number.



3. Select "Attachment".



4. Select "Add Files".



5. Select "Camcorder" and the video camera will open.



6. Start by recording the VIN. Ensure sun glare is not reflecting off windows or other objects.

   Without stopping the recording, capture the area of the vehicle displaying the issue. i.e.;

   - Engine Noise – record the engine.
   - Hole In Block – record the side of the engine with the damage.
   - Seized Engine – record a technician trying to turn the engine over with a breaker bar.



★ NOTICE

NOTE: Ensure the video size is set to "Limit to email" (see page 4). <u>Only record the VIN and the engine exhibiting the concern.</u> Any additional information will increase the size of the video and make it difficult to upload or download.

7. Stop the video when you captured what is needed. Select "OK" to use this capture or "RETRY" to capture the video again.

8. Ensure a description of the recording. For example, engine knock or smoke from exhaust.

9. Select "Submit Case".



10. Select "Yes" when the confirmation message below appears.

    Note: Selecting anything other than "Yes" will not save the video capture.



Appendix 3 (Engine Noise Adapter Threshold)

Code	Concern	Action
RETEST Code 001	Any measured value out of range / below lower limit	Contact GIT America
RETEST Code 002	Any measured value out of range / over upper limit	Contact GIT America
RETEST Code 003	Difference between minimum and maximum of 2000 RPM or Idle RPM measured value out of range	Perform Retest three (3) more times. If Error Code 003 still displays after the third attempt, contact GIT America.
RETEST Code 004	Difference between minimum and maximum of 2000 RPM and Idle RPM measured value out of range	Perform Retest three (3) more times. If Error Code 004 still displays after the third attempt, contact GIT America.
RETEST Code 005	The adapter/extension cable is unplugged or damaged after test started	Perform Retest three (3) more times. If Error Code 005 still displays after the third attempt, contact GIT America.

GIT America can be contacted at (888) 542-4371.

PE19-004

KIA

TAB 68_ PI180 _ P

October 25, 2018

Attention: All Kia Dealer Principals

Kia is conducting a Product Improvement Campaign to perform a software update to the Engine Control Unit (ECU) to protect the engine from excessive connecting rod bearing damage. The affected vehicles include:

- All 2011-2013 MY Optima vehicles equipped with the 2.4L Gasoline Direct Injection (GDI) and 2.0L Turbocharged GDI (T-GDI) engines produced from August 12, 2010 through September 27, 2013;
- All 2014 MY Optima vehicles equipped with the 2.4L Gasoline Direct Injection (GDI) and 2.0L Turbocharged GDI (T-GDI) engines produced at KMMG from August 28, 2013 through May 15, 2014, with engines supplied by Hyundai Motor Manufacturing Alabama;
- All 2012-2014 MY Sorento vehicles equipped with the 2.4L Gasoline Direct Injection (GDI) engines produced from April 19, 2011 through February 10, 2014; and
- All 2011-2013 MY Sportage vehicles equipped with the 2.0L Turbo Gasoline Direct Injection (T-GDI) engines produced from December 30, 2010 through August 30, 2013.

Kia recently developed a Knock Sensor Detection System (KSDS) that detects vibrations indicating the onset of excessive connecting rod bearing wear. The KSDS is designed to alert the driver at an early stage of bearing wear before the occurrence of severe engine damage, including engine failure. If vibrations caused by bearing wear start to occur, the Malfunction Indicator Lamp (MIL)  will blink continuously, and the vehicle will be placed in Limp Home Mode.

The Technical Service Bulletin that provides vehicle repair procedures, affected VIN production range, and warranty claim information will be posted on the Kia Global Information System (KGIS) at www.kiatechinfo.com and the campaign documents will be posted on kdealer.com in the week of **October 29, 2018.**

LIFETIME WARRANTY COVERAGE FOR THIS ISSUE. Upon completion of this Product Improvement Campaign, Kia will provide lifetime engine warranty coverage for this issue **only** (DTC P1326), to both new and used vehicle owners of the affected vehicles identified above, for engine long block assembly repairs needed due to resulting bearing damage.

What Should You Do

Please make certain the appropriate personnel in your dealership are familiar with the details of this Product Improvement Campaign to ensure proper responses to customer inquiries and requests to have the campaign performed on their vehicles. Kia will notify owners **beginning on October 26, 2018.**

LEGAL PRIVACY LIABILITY NOTICE: Pursuant to the terms of the Dealer Sales and Service Agreement and the Gramm-Leach-Bliley federal consumer privacy act, you are required to keep confidential any and all information and documents provided to you by Kia Motors America, Inc. or generated by you in the conduct of carrying out work under that Agreement regarding Kia vehicle purchasers and owners, including but not limited to warranty claim information. Kia dealers may use such owner information for the sole purpose of conducting and performing this product improvement campaign, and for no other purpose.

Your prompt attention in completing this repair is appreciated. If you have any questions, please contact your Kia District Parts & Service Manager.

Sincerely,

Neem Van der Reest
Manager, Technical Services & Engineering
Enclosures

PI1803

PE19-004

KIA

TAB 69_ PI180 _ S

October 25, 2018

Attention: All Kia Dealer Service Managers

Kia is conducting a Product Improvement Campaign to perform a software update to the Engine Control Unit (ECU) to protect the engine from excessive connecting rod bearing damage. The affected vehicles include:

- All 2011-2013 MY Optima vehicles equipped with the 2.4L Gasoline Direct Injection (GDI) and 2.0L Turbocharged GDI (T-GDI) engines produced from August 12, 2010 through September 27, 2013;
- All 2014 MY Optima vehicles equipped with the 2.4L Gasoline Direct Injection (GDI) and 2.0L Turbocharged GDI (T-GDI) engines produced at KMMG from August 28, 2013 through May 15, 2014, with engines supplied by Hyundai Motor Manufacturing Alabama;
- All 2012-2014 MY Sorento vehicles equipped with the 2.4L Gasoline Direct Injection (GDI) engines produced from April 19, 2011 through February 10, 2014; and
- All 2011-2013 MY Sportage vehicles equipped with the 2.0L Turbo Gasoline Direct Injection (T-GDI) engines produced from December 30, 2010 through August 30, 2013.

Kia recently developed a Knock Sensor Detection System (KSDS) that detects vibrations indicating the onset of excessive connecting rod bearing wear. The KSDS is designed to alert the driver at an early stage of bearing wear before the occurrence of severe engine damage, including engine failure. If vibrations caused by bearing wear start to occur, the Malfunction Indicator Lamp (MIL)  will blink continuously, and the vehicle will be placed in Limp Home Mode. This will reduce further damage to the engine and ensure that the vehicle occupants are not exposed to the risk of a more severe engine failure. At that time, Diagnostic Trouble Code ("DTC") P1326, specific to the KSDS, will be recorded in the ECU. The vehicle can continue to be operated for a limited time in Limp Home Mode, but it will accelerate slowly and have a reduced maximum speed. Also, engine RPMs will be limited to approximately 1800-2000 RPM.

LIFETIME WARRANTY COVERAGE FOR THIS ISSUE. Upon completion of this Product Improvement Campaign, Kia will provide lifetime engine warranty coverage for this issue **only** (DTC P1326), to both new and used vehicle owners of the affected vehicles identified above, for engine long block assembly repairs needed due to resulting bearing damage.

The Technical Service Bulletin that provides vehicle repair procedures, affected VIN production range, and warranty claim information will be posted on the Kia Global Information System (KGIS) at www.kiatechinfo.com and the campaign documents will be posted on kdealer.com in the week of **October 29, 2018.**

A copy of the owner notification letter and a Q&A Guide for campaign questions, both of which describe the issue will be made available in the week of **October 29, 2018**. A list of retail Kia Sorento, Optima and Sportage vehicle owners affected by this campaign can be accessed on WEBDCS after the date of the owner notification.

NOTE: Kia will begin the owner notification mailing for the affected vehicles as follows:

- 2014 MY Sorento & Optima: October 26, 2018
- 2013 MY Sorento & Sportage: October 30, 2018
- 2013 MY Optima: Around November 2, 2018
- 2011 MY Optima & Sportage: Around November 6, 2018
- 2012 MY Sorento, Optima & Sportage: Around November 9, 2018

Customers are being strongly encouraged to have the repair completed within 45 days from the date of receipt of the owner notification. **We appreciate your support in encouraging customers to have this Product Improvement Campaign completed as quickly as possible.**

Please start performing the repairs on any affected vehicles currently in your inventory to ensure that the Product Improvement Campaign has been completed prior to delivery.

Please make certain the appropriate personnel in your dealership are familiar with the details of this campaign to ensure proper responses to customer inquiries and requests to have the campaign performed on their Sorento, Optima and Sportage vehicles. Be sure to remind your customers of the importance of following the vehicle's maintenance schedule and keeping maintenance records.

LEGAL PRIVACY LIABILITY NOTICE: Pursuant to the terms of the Dealer Sales and Service Agreement and the Gramm-Leach-Bliley federal consumer privacy act, you are required to keep confidential any and all information and documents provided to you by Kia Motors America, Inc. or generated by you in the conduct of carrying out work under that Agreement regarding Kia vehicle purchasers and owners, including but not limited to warranty claim information. Kia dealers may use such owner information for the sole purpose of conducting and performing this product improvement campaign, and for no other purpose

Your prompt attention in completing this campaign is appreciated. If you have any questions, please contact your Kia District Parts & Service Manager.

Sincerely,



Neem Van der Reest
Manager, Technical Services & Engineering
Enclosures

PE19-004

KIA

TAB 70_ PI180 _ A

QUESTIONS AND ANSWERS

ENGINE CONTROL UNIT (ECU) SOFTWARE UPDATE
PRODUCT IMPROVEMENT CAMPAIGN – PI1803

October 25, 2018

Q1. What sort of campaign is Kia conducting?

A1. Kia Motors America, Inc. is conducting a Product Improvement Campaign to update the software for the Engine Control Unit (ECU) to protect the engine from excessive connecting rod bearing damage.

Q2. What vehicles are affected by this campaign?

A2. All 2011-2013 MY Optima vehicles equipped with the 2.4L Gasoline Direct Injection (GDI) and 2.0L Turbocharged GDI (T-GDI) engines produced from August 12, 2010 through September 27, 2013;

All 2014 MY Optima vehicles equipped with the 2.4L Gasoline Direct Injection (GDI) and 2.0L Turbocharged GDI (T-GDI) engines produced at KMMG from August 28, 2013 through May 15, 2014, with engines supplied by Hyundai Motor Manufacturing Alabama;

All 2012-2014 MY Sorento vehicles equipped with the 2.4L Gasoline Direct Injection (GDI) engines produced from April 19, 2011 through February 10, 2014; and

All 2011-2013 MY Sportage vehicles equipped with the 2.0L Turbo Gasoline Direct Injection (T-GDI) engines produced from December 30, 2010 through August 30, 2013.

Q3. Why is Kia conducting a Product Improvement Campaign?

A3. Kia recently developed Knock Sensor Detection System (KSDS) that detects vibrations indicating the onset of excessive connecting rod bearing wear. The KSDS is designed to alert the driver at an early stage of bearing wear before the occurrence of severe engine damage, including engine failure.

Q4. Can you describe the Product Improvement Campaign and fix?

*A4. Kia has instructed its Kia dealers to perform the software update on the Engine Control Unit ("ECU") to protect the engine from excessive connecting rod bearing damage. Upon completion of this Product Improvement Campaign, Kia will provide **lifetime engine warranty coverage** for this issue only (DTC P1326), to both new and used vehicle owners of the affected vehicles identified above, for engine long block assembly repairs needed due to resulting bearing damage.*

A5. How will the driver know that the Knock Sensor Detection System (KSDS) has detected vibrations indicating the onset of excessive connecting rod bearing wear?

A5. The Malfunction Indicator Lamp (MIL)  *will blink continuously, and the vehicle will be placed in a reduced power and acceleration mode referred to as "Limp Home Mode". The engine RPMs will be limited to approximately 1800-2000 RPM. As a result, the maximum vehicle speed will be limited to approximately 65mph or less depending on vehicle loading and road conditions.*

Q6. Have there been any deaths or injuries as a result of this issue?

A6. No

Q7. Will this cost vehicle owners any money?

A7. No. It will not cost the customer any money to have the Product Improvement Campaign performed.

Q8. How long will the repair take?

A8. The time it takes to perform the repair can vary depending upon the dealer's work schedule, therefore, an appointment is recommended.

Q9. How will owners of the affected vehicles be notified?

A9. Kia will be notifying owners of the affected vehicles by first-class mail beginning on October 26, 2018 through November 9, 2018.

Q10. Where were the vehicles produced?

A10. The affected vehicles were produced at several Kia assembly plants.

Q11. How many vehicles are included?

*A11. Approximately **614,689** vehicles are included in this campaign.*

Q12. Are there any restrictions on an owner's eligibility?

A12. No.

Q13. If a customer has an immediate question, where can they get further information?

A13. They can contact their local Kia dealership or call Kia's Consumer Assistance Center at 1-800-333-4542 (Monday through Friday, 5AM to 6PM, Pacific Standard Time), or contact us via the Owner's Section of www.kia.com.

PE19-004

KIA

TAB 71_ PI180 _TSB

	GROUP	MODEL
KIA	**Product Improvement**	**2011-2014MY Optima (QF/TF) 2012-2014MY Sorento (XMa) 2011-2013MY Sportage (SL)**
	NUMBER	DATE
	1803	**November 2018**

PRODUCT IMPROVEMENT CAMPAIGN

SUBJECT: KNOCK SENSOR DETECTION SYSTEM - ECU LOGIC IMPROVEMENT (PI1803)

* NOTICE

Prior to conducting the procedure described in this bulletin, please make certain the SC147 inspection/repair procedure has been completed on the affected vehicles. If the SC147 inspection/repair procedure has not been completed, please complete the SC147 inspection/repair procedure BEFORE you perform the software update requested in this bulletin.

This bulletin provides information related to a software update to the Engine Control Unit (ECU) to install the Knock Sensor Detection System (KSDS) in order to protect the engine from excessive connecting rod bearing damage. This update is for:

- All 2011-2013 MY Optima (QF/TF) vehicles equipped with the 2.4L Gasoline Direct Injection (GDI) and 2.0L Turbocharged GDI (T-GDI) engines produced from August 12, 2010 through September 27, 2013;
- All 2014 MY Optima (QF) vehicles equipped with the 2.4L Gasoline Direct Injection (GDI) and 2.0L Turbocharged GDI (T-GDI) engines produced at KMMG from August 28, 2013 through May 15, 2014;
- All 2012-2014 MY Sorento vehicles equipped with the 2.4L Gasoline Direct Injection (GDI) engines produced from April 19, 2011 through February 10, 2014; and
- All 2011-2013 MY Sportage vehicles equipped with the 2.0L Turbo Gasoline Direct Injection (T-GDI) engines produced from December 30, 2010 through August 30, 2013.

The KSDS detects vibrations indicating the onset of excessive connecting rod bearing wear. It is designed to alert the driver at an early stage of bearing wear before the occurrence of severe engine damage, including engine failure. If vibrations caused by bearing wear start to occur, the Malfunction Indicator Lamp (MIL) will blink continuously, and the vehicle will be placed in Limp Home Mode. This will reduce further damage to the engine and ensure that the vehicle occupants are not exposed to the risk of a more severe engine failure. At that time, Diagnostic Trouble Code ("DTC") P1326, specific to the KSDS, will be recorded in the ECU. The vehicle can continue to be operated for a limited time in Limp Home Mode, but it will accelerate slowly and have a reduced maximum speed. Also, engine RPMs will be limited to approximately 1800-2000 RPM.

Kia is requesting the completion of this Product Improvement Campaign on all affected vehicles. Before conducting the procedure, verify the vehicle is included in the list of affected VINs. Also, please have your KDS connected to the internet regularly to get the latest software updates available.

File Under: <Product Improvement>

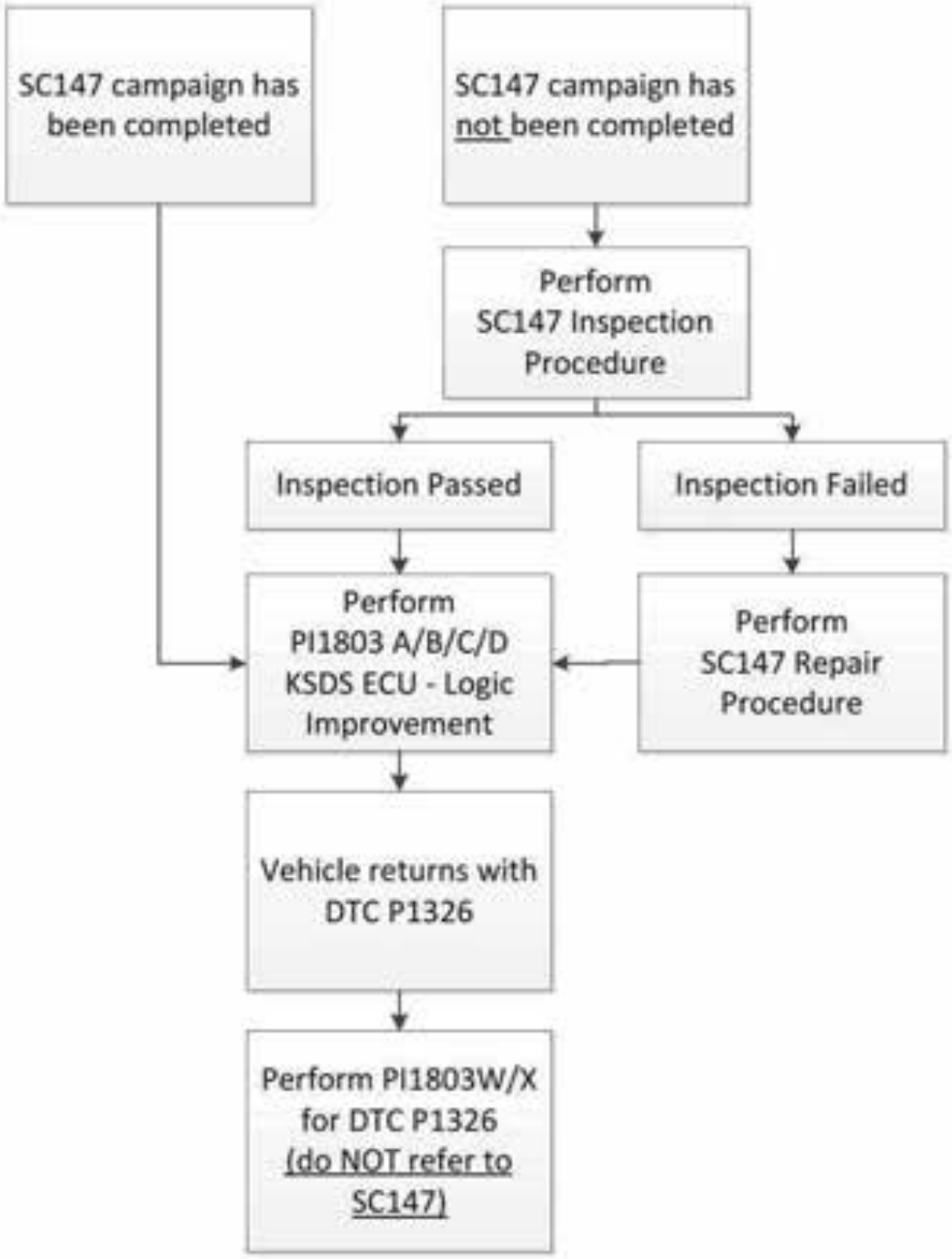
Circulate To: ☒ General Manager ☒ Service Manager ☒ Parts Manager ☒ Service Advisors ☒ Technicians ☒ Body Shop Manager ☐ Fleet Repair

SUBJECT: KNOCK SENSOR DETECTION SYSTEM – ECU LOGIC IMPROVEMENT (PI1803)

★ NOTICE

To assure complete customer satisfaction, always remember to refer to WebDCS Warranty Coverage (validation) Inquiry Screen (Service → Warranty Coverage → Warranty Coverage Inquiry) for a list of any additional campaigns that may need to be performed on the vehicle before returning it to the customer.

SC147 → PI1803 Flow Chart



SUBJECT: KNOCK SENSOR DETECTION SYSTEM – ECU LOGIC IMPROVEMENT (PI1803)

ECU Upgrade Procedure:

To correct this condition, the ECU should be reprogrammed using the KDS download, as described in this bulletin.

Upgrade Event Name
382. XMA THETA 2.4GDI Knock Sensor Detection System(KSDS) ECU UPGRADE (12~14MY)
383 TF THETA 2.0/2.4 Knock Sensor Detection System(KSDS) ECU UPGRADE (11~13MY)
384. QF THETA 2.0/2.4 Knock Sensor Detection System(KSDS) ECU UPGRADE (12~14MY)
385. SL THETA 2.0T-GDI Knock Sensor Detection System(KSDS) ECU UPGRADE (11~13MY)

★ NOTICE

- A fully charged battery is necessary before ECU upgrade can take place. It is recommended that the Midtronics GR8-1299 system be used in ECU mode during charging. DO NOT connect any other battery charger to the vehicle during ECU upgrade.
- All ECU upgrades must be done with the ignition key in the 'ON' position.
- Be careful not to disconnect the VCI-II connected to the vehicle during the ECU upgrade procedure.
- DO NOT start the engine during ECU upgrade.
- DO NOT turn the ignition key 'OFF' or interrupt the power supply during ECU upgrade.
- When the ECU upgrade is completed, turn the ignition 'OFF' and wait 10 seconds before starting the engine.
- ONLY use approved ECU upgrade software designated for the correct model, year.

⚠ CAUTION

Before attempting an ECU upgrade on any Kia model, make sure to first determine whether the particular model is equipped with an immobilizer security system. Failure to follow proper procedures may cause the PCM to become inoperative after the upgrade and any claims associated with this repair may be subject to chargeback.

★ NOTICE

For Optima models included in this TSB:
VINs that start with 5XX are designated Optima (QF) and produced in the United States. VINs that start with KNA are designated Optima (TF) are produced in South Korea.

SUBJECT: KNOCK SENSOR DETECTION SYSTEM – ECU LOGIC IMPROVEMENT (PI1803)

ROM ID INFORMATION TABLE:

Upgrade Event #382 (XMa), #383 (TF), #384 (QF), #385 (SL)

Model	Engine	IMMO	ECU P/No.	ROM ID	
				Previous	New
12MY Sor. (XMa)	2.4	Yes	39113-2G770 39113-2G775	2WD_XCC4RB3A 2WD_XCC4RB3C 2WD_XCC4RB3D 2WD_XCC4RB3E 2WD_XCC4RB3F	2WD_XCC4RB3K
			39114-2G770	4WD_XCC4RB3A 4WD_XCC4RB3C 4WD_XCC4RB3D 4WD_XCC4RB3E 4WD_XCC4RB3F	4WD_XCC4RB3L
		No	39113-2G760 39113-2G765	2WD_XCC4MB3A 2WD_XCC4MB3C 2WD_XCC4MB3D 2WD_XCC4MB3E 2WD_XCC4MB3F	2WD_XCC4MB3K
			39114-2G760	4WD_XCC4MB3A 4WD_XCC4MB3C 4WD_XCC4MB3D 4WD_XCC4MB3E 4WD_XCC4MB3F	4WD_XCC4MB3L
13MY Sor. (XMa)	2.4	Yes	39113-2G771	2WD_XDC4RE0A 2WD_XDC4REAA 2WD_XDC4REAB 2WD_XDC4REAC 2WD_XDC4REAE 2WD_XDC4REAG	2WD_XDC4REAK
				2WD_XDC4READ 2WD_XDC4REAF 2WD_XDC4REAH	2WD_XDC4REAM
			39114-2G771	4WD_XDC4RE0A 4WD_XDC4REAA 4WD_XDC4REAB 4WD_XDC4REAC 4WD_XDC4REAE 4WD_XDC4REAG	4WD_XDC4REAL
				4WD_XDC4READ 4WD_XDC4REAF 4WD_XDC4REAH	4WD_XDC4REAN
		No	39113-2G761	2WD_XDC4ME0A 2WD_XDC4MEAA 2WD_XDC4MEAB 2WD_XDC4MEAC 2WD_XDC4MEAE 2WD_XDC4MEAG	2WD_XDC4MEAK
				2WD_XDC4MEAD 2WD_XDC4MEAF 2WD_XDC4MEAH	2WD_XDC4MEAM
			39114-2G761	4WD_XDC4ME0A 4WD_XDC4MEAA 4WD_XDC4MEAB 4WD_XDC4MEAC 4WD_XDC4MEAE 4WD_XDC4MEAG	4WD_XDC4MEAL
				4WD_XDC4MEAD 4WD_XDC4MEAF 4WD_XDC4MEAH	4WD_XDC4MEAN

SUBJECT: KNOCK SENSOR DETECTION SYSTEM – ECU LOGIC IMPROVEMENT (PI1803)

Model	Engine	IMMO	ECU P/No.	ROM ID	
				Previous	New
14MY Sor. (XMa)	2.4	Yes	39113-2GBK5 39114-2GBK5	2WD_FDC4RF3A 2WD_FDC4RG0A 2WD_FDC4RG0B 2WD_FDC4RG0C	2WD_FEC4RG1K
				2WD_FEC4RH2A 2WD_FEC4RH2B	2WD_FEC4RH2K
			39113-2GBL5	4WD_FDC4RF3A 4WD_FDC4RG0A 4WD_FDC4RG0B 4WD_FDC4RG0C	4WD_FEC4RG1L
				4WD_FEC4RH2A 4WD_FEC4RH2B	4WD_FEC4RH2L
		No	39113-2GBK0 39114-2GBK0	2WD_FDC4MF3A 2WD_FDC4MG0A 2WD_FDC4MG0B 2WD_FDC4MG0C	2WD_FEC4MG1K
				2WD_FEC4MH2A 2WD_FEC4MH2B	2WD_FEC4MH2K
			39113-2GBL0	4WD_FDC4MF3A 4WD_FDC4MG0A 4WD_FDC4MG0B 4WD_FDC4MG0C	4WD_FEC4MG1L
				4WD_FEC4MH2A 4WD_FEC4MH2B	4WD_FEC4MH2L
11MY Opt. (TF)	2.4 (ULEV)	Yes	39111-2G870 39112-2G870	TBC4R85A TBC4R86A TBC4R86B TBC4R86D	TBC4RB3K
			39111-2G871 39112-2G871	TBC4R86C TBC4R88A TBC4R88B TBC4RB3A TBC4RB3B TBC4RB3C	TBC4RB3L
		No	39111-2G860 39112-2G860	TBC4M85A TBC4M86A TBC4M86B TBC4M86D	TBC4MB3K
			39111-2G861 39112-2G861	TBC4M86C TBC4M88A TBC4M88B TBC4MB3A TBC4MB3B TBC4MB3C	TBC4MB3L

SUBJECT: KNOCK SENSOR DETECTION SYSTEM – ECU LOGIC IMPROVEMENT (PI1803)

Model	Engine	IMMO	ECU P/No.	ROM ID	
				Previous	New
11MY Opt. (TF)	2.4 (SULEV)	Yes	39111-2G875	TBS4R85A TBS4R86A TBS4R86B TBS4RF3E TBS4RF3G	TBS4RF3K
			3911102G876	TBS4R86C TBS4R88A TBS4R88B TBS4RB3A TBS4RB3B TBS4RF3F TBS4RF3H	TBS4RF3L
		No	39111-2G865	TBS4M85A TBS4M86A TBS4M86B TBS4MF3E TBS4MF3G	TBS4MF3K
			39111-2G866	TBS4M86C TBS4M88A TBS4M88B TBS4MB3A TBS4MB3B TBS4MF3F TBS4MF3H	TBS4MF3L
12MY Opt. (TF)	2.4 (ULEV)	Yes	39111-2G873 39112-2G873	TCC4RB3K TCC4REAK TCC4REAL TCC4REAM	TCC4REA5
		No	39111-2G863 39112-2G863	TCC4MB3K TCC4MEAK TCC4MEAL TCC4MEAM	TCC4MEA5
	2.4 (SULEV)	Yes	39111-2G878	TCS4RB3K TCS4REAK TCS4REAL TCS4REAM	TCS4REA5
		No	39111-2G868	TCS4MB3K TCS4MEAK TCS4MEAL TCS4MEAM	TCS4MEA5
13MY Opt. (TF)	2.4 (ULEV)	Yes	39111-2G902 39112-2G902	TDC4REAK TDC4RF0K TDC4RF3K TDC4RG1K TDC4RG1L TDC4RG1M	TDC4RG15
		No	39111-2G900 39112-2G900	TDC4MEAK TDC4MF0K TDC4MF3K TDC4MG1K TDC4MG1L TDC4MG1M	TDC4MG15

SUBJECT: KNOCK SENSOR DETECTION SYSTEM – ECU LOGIC IMPROVEMENT (PI1803)

Model	Engine	IMMO	ECU P/No.	ROM ID	
				Previous	New
13MY Opt. (TF)	2.4 (SULEV)	Yes	39111-2G903	TDS4REAK TDS4RF0K TDS4RF3K TDS4RG1K TDS4RG1L TDS4RG1M	TDS4RG15
		No	39111-2G901	TDS4MEAK TDS4MF0K TDS4MF3K TDS4MG1K TDS4MG1L TDS4MG1M	TDS4MG15
11-13MY Opt. (TF)	2.0T (ULEV)	Yes	39111-2G890 39111-2G892 39111-2G894	TBC0R95C TBC0R96A TBC0R97A TBC0R97B TBC0RB3A TBC0RC0A TDC0RF3L TCC0RC0K TCC0RC0L TCC0RC0M TDC0REAK TDC0RE5K TDC0RF3K	TDC0RF35
		No	39111-2G880 39111-2G882 39111-2G884	TBC0M95C TBC0M96A TBC0M97A TBC0M97B TBC0MB3A TBC0MC0A TDC0MF3L TCC0MC0L TCC0MC0K TCC0MC0M TDC0MEAK TDC0ME5K TDC0MF3K	TDC0MF35
13MY Opt. (TF)	2.0T (ULEV)	Yes	39111-2G895	TDC0RG1K TDC0RG1L	TDC0RG15
		No	39111-2G885	TDC0MG1K TDC0MG1L	TDC0MG15
12MY Opt. (QF)	2.4 (ULEV)	Yes	39111-2G872 39112-2G872	TCC4RB3A TCC4REAA TCC4REAB TCC4REAC	TCC4REA1
		No	39111-2G862 39112-2G862	TCC4MB3A TCC4MEAA TCC4MEAB TCC4MEAC	TCC4MEA1
	2.4 (SULEV)	Yes	39111-2G877	TCS4RB3A TCS4REAA TCS4REAB TCS4REAC	TCS4REA1
		No	39111-2G867	TCS4MB3A TCS4MEAA TCS4MEAB TCS4MEAC	TCS4MEA1

SUBJECT: KNOCK SENSOR DETECTION SYSTEM – ECU LOGIC IMPROVEMENT (PI1803)

Model	Engine	IMMO	ECU P/No.	ROM ID	
				Previous	New
13MY Opt. (QF)	2.4 (ULEV)	Yes	39111-2G874 39112-2G874	TDC4REAA TDC4RF0A TDC4RF3A TDC4RF3B TDC4RF3C	TDC4RF31
		No	39111-2G864 39112-2G864	TDC4MEAA TDC4MF0A TDC4MF3A TDC4MF3B TDC4MF3C	TDC4MF31
	2.4 (SULEV)	Yes	39111-2G879	TDS4REAA TDS4RF0A TDS4RF3A TDS4RF3B TDS4RF3C	TDS4RF31
		No	39111-2G869	TDS4MEAA TDS4MF0A TDS4MF3A TDS4MF3B TDS4MF3C	TDS4MF31
14MY Opt. (QF)	2.4 (ULEV)	Yes	39108-2GBJ0 39118-2GBJ0	TEC4RH2A TEC4RH2B	TEC4RH21
		No	39108-2GBH0 39118-2GBH0	TEC4MH2A TEC4MH2B	TEC4MH21
	2.4 (SULEV)	Yes	39108-2GBJ5	TES4RH2A TES4RH2B	TES4RH21
		No	39108-2GBH5	TES4MH2A TES4MH2B	TES4MH21
12-13MY Opt. (QF)	2.0T (ULEV)	Yes	39111-2G891 39111-2G893	TCC0RC0A TCC0RC0B TCC0RC0C TDC0RF3B TDC0RE3A TDC0RE5A TDC0REAA TDC0RF3A	TDC0RF31
		No	39111-2G881 39111-2G883	TCC0MC0A TCC0MC0B TCC0MC0C TDC0MF3B TDC0ME3A TDC0ME5A TDC0MEAA TDC0MF3A	TDC0MF31
		Yes	39111-2G895	TDC0RG1A TDC0RG1B	TDC0RG11
		No	39111-2G885	TDC0MG1A TDC0MG1B	TDC0MG11
14MY Opt. (QF)	2.0T (ULEV)	Yes	39108-2GBK5	TEC0RH2A TEC0RH2B	TEC0RH21
		No	39108-2GBK0	TEC0MH2A TEC0MH2B	TEC0MH21

SUBJECT: KNOCK SENSOR DETECTION SYSTEM – ECU LOGIC IMPROVEMENT (PI1803)

Model	Engine	IMMO	ECU P/No.	ROM ID	
				Previous	New
11-13MY Spo. (SL)	2.0T (ULEV)	Yes	39113-2G870 39114-2G870 39113-2G871 39114-2G871 39113-2G872 39114-2G872	SCC0RB1A SCC0RB3A SCC0RC0A SDC0RF3B SCC0RC0B SDC0RE3A SDC0RE5A SDC0REAA SDC0RF3A	SDC0RF3K
		No	39113-2G860 39114-2G860 39113-2G861 39114-2G861 39113-2G862 39114-2G862	SCC0MB1A SCC0MB3A SCC0MC0A SDC0MF3B SCC0MC0B SDC0ME3A SDC0ME5A SDC0MEAA SDC0MF3A	SDC0MF3K
13MY Spo. (SL)	2.0T (ULEV)	Yes	39113-2G873 39114-2G873	SDC0RG1A SDC0RG1B	SDC0RG1K
		No	39113-2G863 39114-2G863	SDC0MG1A SDC0MG1B	SDC0MG1K

To verify the vehicle is affected, be sure to check the Calibration Identification of the vehicle's ECM ROM ID and reference the Information Table as necessary.

★ NOTICE

Prior to performing the ECU upgrade, be sure to check that the KDS is fully charged.

1. Connect the VCI-II to the OBD-II connector, located under the driver's side of the instrument panel.



★ NOTICE

The ECU upgrade function on KDS operates wirelessly. It is not necessary to perform the upgrade via USB cable.

2. With the ignition ON, turn ON the KDS tablet. Select **KDS** from the home screen.



SUBJECT: KNOCK SENSOR DETECTION SYSTEM – ECU LOGIC IMPROVEMENT (PI1803)

3. Confirm communication with VCI (A) and then configure the vehicle (B) using the **AUTO VIN** (C) feature.



4. Select **ECU Upgrade**.



5. The KDS will check the server for recently uploaded Events and then automatically download **Upgrade Event #382 (XMa), #383 (TF), #384 (QF), or #385 (SL).**

★ NOTICE

The vehicle must be identified in Vehicle Selection to download an Event for that vehicle.



KDS screenshot shown above is for demonstration purposes only. Events shown in screenshot are not applicable to this bulletin.

6. Select **Auto Mode**.

★ NOTICE

Do NOT attempt to perform a Manual Mode upgrade <u>UNLESS Auto Mode fails</u>. Always follow the instructions given on the KDS in either Auto or Manual mode.



SUBJECT: KNOCK SENSOR DETECTION SYSTEM – ECU LOGIC IMPROVEMENT (PI1803)

7. Select the **ENGINE** system under the System selection menu.

   Touch **ID Check** (D) and confirm that the latest update is available.

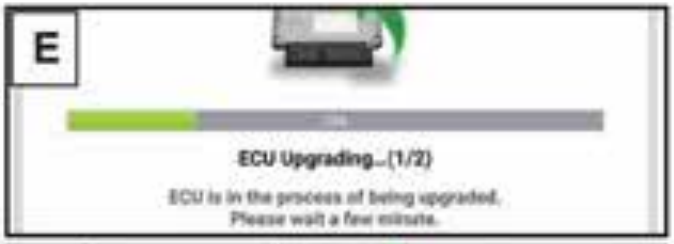
   Select **Upgrade Event #382 (XMa), #383 (TF), #384 (QF), or #385 (SL)** and select **Upgrade** to continue.



8. The ECU upgrade will begin and the progress of the upgrade will appear on the bar graph. Upgrade part (1/2) (E) will download the upgrade event to the VCI-II. Upgrade part (2/2) (F) will upgrade the ECU.

★ NOTICE

Do not touch the system buttons (like 'Back', 'Home', 'etc.') while performing ECU Upgrade.





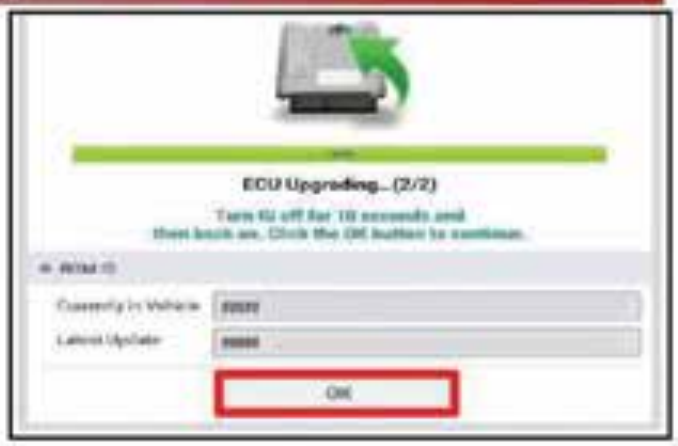
9. If a "Communication Fail" screen appears, verify that the VCI-II and KDS are communicating properly. Touch **OK** and restart the procedure from step 4.

★ NOTICE

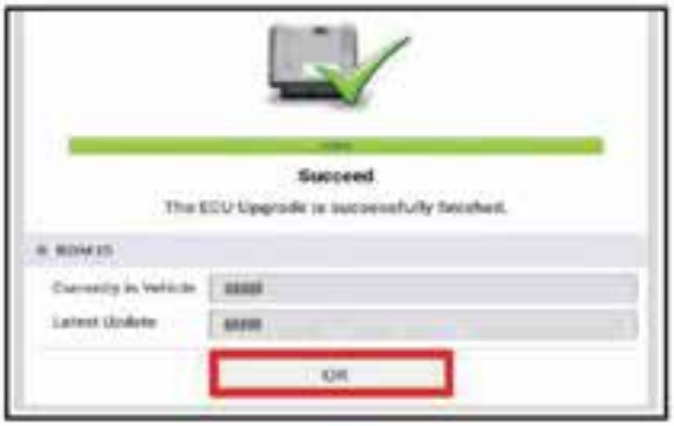
If an error notice continues to appear or if the upgrade cannot be performed, DO NOT disconnect the KDS/VCI-II. Contact GIT America Help Desk at (888) 542-4371 or Techline.



10. When instructed on the KDS, turn the ignition **OFF** for ten (10) seconds then back on. Touch **OK** to continue.



11. Once the upgrade is complete, touch **OK** to finalize the procedure.



12. When prompted, select **YES** to check for Diagnostic Trouble Codes (DTC) and erase any DTCs stored such as EPS, ESC, and TPMS that may have been set during the upgrade.



13. Start the engine to confirm proper operation of the vehicle.

SUBJECT: KNOCK SENSOR DETECTION SYSTEM – ECU LOGIC IMPROVEMENT (PI1803)

Manual Upgrade Procedure:

*** NOTICE**

The manual upgrade should ONLY be performed if the automatic upgrade fails.

If the automatic upgrade fails, turn the ignition OFF for about 10 seconds then place it back in the ON position to reset the control unit BEFORE performing manual upgrade.

See table below for Manual Mode passwords.

Manual Mode ECU Upgrade Passwords

Model	Menu	Password
XMA	XMA 2.4GDI -IMMO 12MY(2WD) : 39113-2G760/65 [2WD_XCC4MB3A/3C/3D/3E/3F]	1365
	XMA 2.4GDI +IMMO 12MY(2WD) : 39113-2G770/75 [2WD_XCC4RB3A/3C/3D/3E/3F]	1375
	XMA 2.4GDI -IMMO 12MY(4WD) : 39114-2G760 [4WD_XCC4MB3A/3C/3D/3E/3F]	1460
	XMA 2.4GDI +IMMO 12MY(4WD) : 39114-2G770 [4WD_XCC4RB3A/3C/3D/3E/3F]	1470
	XMA 2.4GDI -IMMO 13MY(2WD) : 39113-2G761 [2WD_XDC4ME0A/AA/AB/AC/AE/AG]	1361
	XMA 2.4GDI +IMMO/SMK 13MY(2WD) : 39113-2G771 [2WD_XDC4RE0A/AA/AB/AC/AE/AG]	1371
	XMA 2.4GDI -IMMO 13MY(4WD) : 39114-2G761 [4WD_XDC4ME0A/AA/AB/AC/AE/AG]	1461
	XMA 2.4GDI +IMMO/SMK 13MY(4WD) : 39114-2G771 [4WD_XDC4RE0A/AA/AB/AC/AE/AG]	1471
	XMA 2.4GDI -IMMO 13MY(2WD) : 39113-2G761 [2WD_XDC4MEAD/AF/AH]	1362
	XMA 2.4GDI +IMMO/SMK 13MY(2WD) : 39113-2G771 [2WD_XDC4READ/AF/AH]	1372
	XMA 2.4GDI -IMMO 13MY(4WD) : 39114-2G761 [4WD_XDC4MEAD/AF/AH]	1462
	XMA 2.4GDI +IMMO/SMK 13MY(4WD) : 39114-2G771 [4WD_XDC4READ/AF/AH]	1472
	XMA 2.4GDI -IMMO 14MY(2WD) : 39113/14-2GBK0 [2WD_FDC4MF3A/G0A/G0B/G0C]	1420
	XMA 2.4GDI +IMMO/SMK 14MY(2WD) : 39113/14-2GBK5 [2WD_FDC4RF3A/G0A/G0B/G0C]	1425
	XMA 2.4GDI -IMMO 14MY(4WD) : 39113-2GBL0 [4WD_FDC4MF3A/G0A/G0B/G0C]	1320
	XMA 2.4GDI +IMMO/SMK 14MY(4WD) : 39113-2GBL5 [4WD_FDC4RF3A/G0A/G0B/G0C]	1325
	XMA 2.4GDI -IMMO 14MY(2WD) : 39113/14-2GBK0 [2WD_FEC4MH2A/B]	1421
	XMA 2.4GDI +IMMO/SMK 14MY(2WD) : 39113/14-2GBK5 [2WD_FEC4RH2A/B]	1426
	XMA 2.4GDI -IMMO 14MY(4WD) : 39113-2GBL0 [4WD_FEC4MH2A/B]	1321
	XMA 2.4GDI +IMMO/SMK 14MY(4WD) : 39113-2GBL5 [4WD_FEC4RH2A/B]	1326
TF	TF 2.0T-GDI -IMMO 11MY~13MY (ULEV) : 39111-2G880/82/84	1184
	TF 2.0T-GDI +IMMO/SMK 11MY~13MY (ULEV) : 39111-2G890/92/94	1194
	TF 2.0T-GDI -IMMO 13MY(ULEV) : 39111-2G885	1185
	TF 2.0T-GDI +IMMO/SMK 13MY(ULEV) : 39111-2G895	1195
	TF 2.4GDI -IMMO 11MY(ULEV) : 39111/12-2G860	1260
	TF 2.4GDI +IMMO 11MY(ULEV) : 39111/12-2G870	1270
	TF 2.4GDI -IMMO 11MY(ULEV) : 39111/12-2G861	1261
	TF 2.4GDI +IMMO 11MY(ULEV) : 39111/12-2G871	1271
	TF 2.4GDI -IMMO 11MY(SULEV) : 39111-2G865	1165
	TF 2.4GDI +IMMO 11MY(SULEV) : 39111-2G875	1175
	TF 2.4GDI -IMMO 11MY(SULEV) : 39111-2G866	1166
	TF 2.4GDI +IMMO 11MY(SULEV) : 39111-2G876	1176
	TF 2.4GDI -IMMO 12MY(ULEV) : 39111/12-2G863	1263
	TF 2.4GDI +IMMO 12MY(ULEV) : 39111/12-2G873	1273
	TF 2.4GDI -IMMO 12MY(SULEV) : 39111-2G868	1168
	TF 2.4GDI +IMMO 12MY(SULEV) : 39111-2G878	1178
	TF 2.4GDI -IMMO 13MY(ULEV) : 39111/12-2G900	1200
	TF 2.4GDI +IMMO/SMK 13MY(ULEV) : 39111/12-2G902	1202
	TF 2.4GDI -IMMO 13MY(SULEV) : 39111-2G901	1101
	TF 2.4GDI +IMMO/SMK 13MY(SULEV) : 39111-2G903	1103
QF	QF 2.0T-GDI -IMMO 12~13MY (ULEV) : 39111-2G881/83	1183
	QF 2.0T-GDI +IMMO/SMK 12~13MY (ULEV) : 39111-2G891/93	1193
	QF 2.0T-GDI -IMMO 13MY(ULEV) : 39111-2G885	1185
	QF 2.0T-GDI +IMMO/SMK 13MY(ULEV) : 39111-2G895	1195
	QF 2.0T-GDI -IMMO 14MY(ULEV) : 39108-2GBK0	0820

SUBJECT: KNOCK SENSOR DETECTION SYSTEM – ECU LOGIC IMPROVEMENT (PI1803)

QF	QF 2.0T-GDI +IMMO/SMK 14MY(ULEV) : 39108-2GBK5	0825
	QF 2.4GDI -IMMO 12MY(ULEV) : 39111/12-2G862	1262
	QF 2.4GDI +IMMO 12MY(ULEV) : 39111/12-2G872	1272
	QF 2.4GDI -IMMO 12MY(SULEV) : 39111-2G867	1167
	QF 2.4GDI +IMMO 12MY(SULEV) : 39111-2G877	1177
	QF 2.4GDI -IMMO 13MY(ULEV) : 39111/12-2G864	1264
	QF 2.4GDI +IMMO/SMK 13MY(ULEV) : 39111/12-2G874	1274
	QF 2.4GDI -IMMO 13MY(SULEV) : 39111-2G869	1169
	QF 2.4GDI +IMMO/SMK 13MY(SULEV) : 39111-2G879	1179
	QF 2.4GDI -IMMO 14MY(ULEV) : 39108/18-2GBH0	1820
	QF 2.4GDI +IMMO/SMK 14MY(ULEV) : 39108/18-2GBJ0	1821
	QF 2.4GDI -IMMO 14MY(SULEV) : 39108-2GBH5	0825
	QF 2.4GDI +IMMO/SMK 14MY(SULEV) : 39108-2GBJ5	0826
SL	SL 2.0T-GDI -IMMO 11~13MY (ULEV) : 39113/14-2G860/61/62	1462
	SL 2.0T-GDI +IMMO/SMK 11~13MY (ULEV) : 39113/14-2G870/71/72	1472
	SL 2.0T-GDI -IMMO 13MY(ULEV) : 39113/14-2G863	1463
	SL 2.0T-GDI +IMMO/SMK 13MY(ULEV) : 39113/14-2G873	1473

1. Within the ECU Upgrade screen displayed, select **Manual Mode**.
2. Select the **ENGINE** system under the System selection menu. Select **Upgrade Event #382 (XMa), #383 (TF), #384 (QF), or #385 (SL)** and select **Upgrade** to continue.
3. Select the appropriate control unit part number with reference to the ROM ID Information Table on page 3-8, and select **OK**.
4. Enter the appropriate password from the Manual Mode password table above and select **OK**.
5. The upgrade will begin and the progress of the upgrade will appear on the bar graph.
6. When instructed on the KDS, turn the ignition **OFF** for ten (10) seconds then back on. Touch **OK** to continue.
7. Once the upgrade is complete, touch **OK** to finalize the procedure.
8. When prompted, select **YES** to check for Diagnostic Trouble Codes (DTC) and erase any DTCs stored such as EPS, ESC, and TPMS that may have been set during the upgrade.
9. Start the engine to confirm proper operation of the vehicle.

SUBJECT: KNOCK SENSOR DETECTION SYSTEM – ECU LOGIC IMPROVEMENT (PI1803)

AFFECTED VEHICLE RANGE:

Model	Production Date Range
11-13MY Optima (QF/TF)	August 12, 2010 through September 27, 2013
14MY Optima (QF)	August 28, 2013 through May 15, 2014
12-14MY Sorento (XMa)	April 19, 2011 through February 10, 2014
11-13MY Sportage (SL)	December 30, 2010 through August 30, 2013

WARRANTY INFORMATION (PI1803A/B/C/D):

N Code: N99 C Code: C99

Model	Claim Type	Causal P/N	Qty.	Repair Description	Labor Op Code	Op Time	Replacement P/N	Qty.
TF (11-13MY)	R	39111 2G870	0	(PI1803A/B/C/D) KSDS - ECU Logic Improvement	180133R0	0.3 M/H	N/A	0
QF (12-14MY)	R	39111 2G872	0	(PI1803A/B/C/D) KSDS - ECU Logic Improvement	180A22R0	0.3 M/H	N/A	0
XMa (12-14MY)	R	39113 2G770	0	(PI1803A/B/C/D) KSDS - ECU Logic Improvement	180A21R0	0.3 M/H	N/A	0
SL (11-13MY)	R	39113 2G860	0	(PI1803A/B/C/D) KSDS - ECU Logic Improvement	180134R0	0.3 M/H	N/A	0

*** NOTICE**

VIN inquiry data for this repair is provided for tracking purposes only. Kia retailers should reference PI1803* when accessing the WebDCS system.

PE19-004

KIA

TAB 72_ PI180 _TSB_R1

	GROUP	MODEL
	Product Improvement	**2011-2014MY Optima (QF/TF) 2012-2014MY Sorento (XMa) 2011-2013MY Sportage (SL)**
	NUMBER	DATE
	1803 (Rev 1, 01/02/2018)	**November 2018**

PRODUCT IMPROVEMENT CAMPAIGN

SUBJECT: KNOCK SENSOR DETECTION SYSTEM - ECU LOGIC IMPROVEMENT (PI1803)

★ NOTICE

This bulletin has been revised to include additional information. New/revised sections of this bulletin are indicated by a black bar in the margin area.

This bulletin provides information related to a software update to the Engine Control Unit (ECU) to install the Knock Sensor Detection System (KSDS) in order to protect the engine from excessive connecting rod bearing damage. This update is for:

- All 2011-2013 MY Optima (QF/TF) vehicles equipped with the 2.4L Gasoline Direct Injection (GDI) and 2.0L Turbocharged GDI (T-GDI) engines produced from August 12, 2010 through September 27, 2013;
- All 2014 MY Optima (QF) vehicles equipped with the 2.4L Gasoline Direct Injection (GDI) and 2.0L Turbocharged GDI (T-GDI) engines produced at KMMG from August 28, 2013 through May 15, 2014;
- All 2012-2014 MY Sorento vehicles equipped with the 2.4L Gasoline Direct Injection (GDI) engines produced from April 19, 2011 through February 10, 2014; and
- All 2011-2013 MY Sportage vehicles equipped with the 2.0L Turbo Gasoline Direct Injection (T-GDI) engines produced from December 30, 2010 through August 30, 2013.

The KSDS detects vibrations indicating the onset of excessive connecting rod bearing wear. It is designed to alert the driver at an early stage of bearing wear before the occurrence of severe engine damage, including engine failure. If vibrations caused by bearing wear start to occur, the Malfunction Indicator Lamp (MIL) will blink continuously, and the vehicle will be placed in Limp Home Mode. This will reduce further damage to the engine and ensure that the vehicle occupants are not exposed to the risk of a more severe engine failure. At that time, Diagnostic Trouble Code ("DTC") P1326, specific to the KSDS, will be recorded in the ECU. The vehicle can continue to be operated for a limited time in Limp Home Mode, but it will accelerate slowly and have a reduced maximum speed. Also, engine RPMs will be limited to approximately 1800-2000 RPM.

Kia is requesting the completion of this Product Improvement Campaign on all affected vehicles. Before conducting the procedure, verify the vehicle is included in the list of affected VINs. Also, please have your KDS connected to the internet regularly to get the latest software updates available.

File Under: <Product Improvement>

Circulate To: ☒ General Manager ☒ Service Manager ☒ Parts Manager ☒ Service Advisors ☒ Technicians ☒ Body Shop Manager ☐ Fleet Repair

SUBJECT: KNOCK SENSOR DETECTION SYSTEM – ECU LOGIC IMPROVEMENT (PI1803)

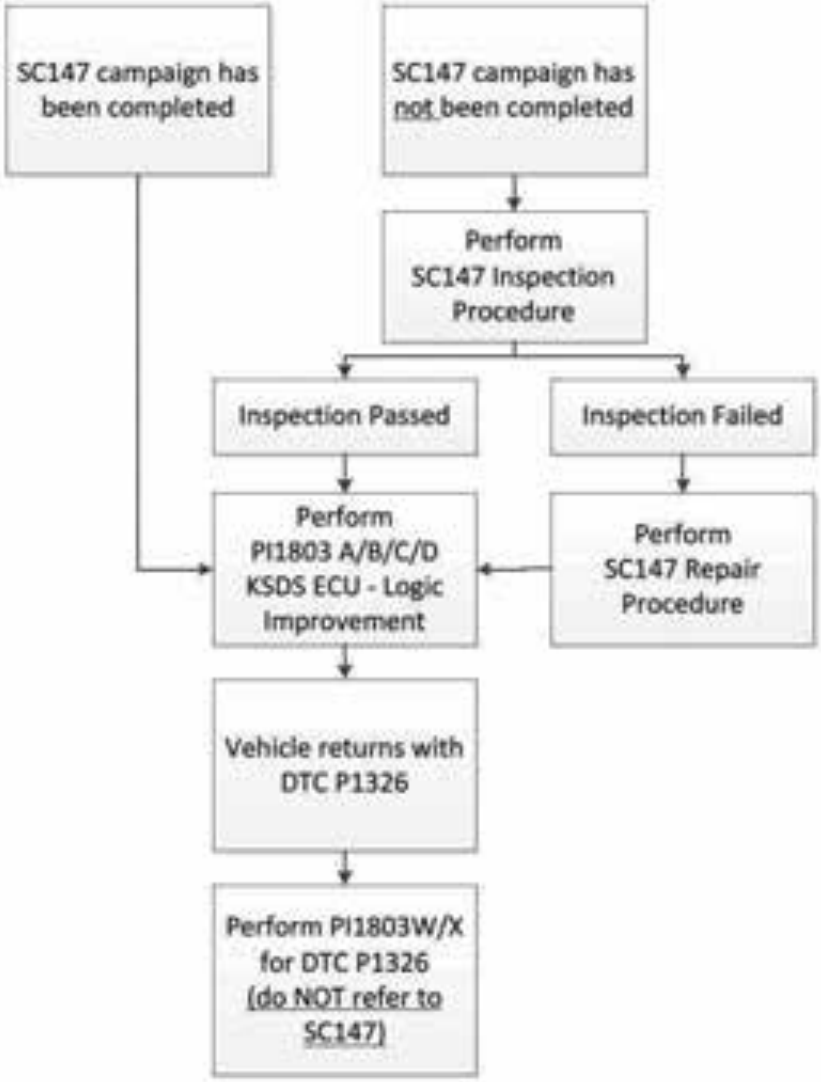
★ NOTICE

Prior to conducting the procedure described in this bulletin, please make certain the SC147 inspection/repair procedure has been completed on the affected vehicles. If the SC147 inspection/repair procedure has not been completed, please complete the SC147 inspection/repair procedure BEFORE you perform the software update requested in this bulletin.

★ NOTICE

To assure complete customer satisfaction, always remember to refer to WebDCS Warranty Coverage (validation) Inquiry Screen (Service → Warranty Coverage → Warranty Coverage Inquiry) for a list of any additional campaigns that may need to be performed on the vehicle before returning it to the customer.

SC147 → PI1803 Flow Chart



SUBJECT: KNOCK SENSOR DETECTION SYSTEM – ECU LOGIC IMPROVEMENT (PI1803)

ECU Upgrade Procedure:

To correct this condition, the ECU should be reprogrammed using the KDS download, as described in this bulletin.

Upgrade Event Name
382. XMA THETA 2.4GDI Knock Sensor Detection System(KSDS) ECU UPGRADE (12~14MY)
383 TF THETA 2.0/2.4 Knock Sensor Detection System(KSDS) ECU UPGRADE (11~13MY)
384. QF THETA 2.0/2.4 Knock Sensor Detection System(KSDS) ECU UPGRADE (12~14MY)
385. SL THETA 2.0T-GDI Knock Sensor Detection System(KSDS) ECU UPGRADE (11~13MY)

★ NOTICE

- A fully charged battery is necessary before ECU upgrade can take place. It is recommended that the Midtronics GR8-1299 system be used in ECU mode during charging. DO NOT connect any other battery charger to the vehicle during ECU upgrade.
- All ECU upgrades must be done with the ignition key in the 'ON' position.
- Be careful not to disconnect the VCI-II connected to the vehicle during the ECU upgrade procedure.
- DO NOT start the engine during ECU upgrade.
- DO NOT turn the ignition key 'OFF' or interrupt the power supply during ECU upgrade.
- When the ECU upgrade is completed, turn the ignition 'OFF' and wait 10 seconds before starting the engine.
- ONLY use approved ECU upgrade software designated for the correct model, year.

⚠ CAUTION

Before attempting an ECU upgrade on any Kia model, make sure to first determine whether the particular model is equipped with an immobilizer security system. Failure to follow proper procedures may cause the PCM to become inoperative after the upgrade and any claims associated with this repair may be subject to chargeback.

★ NOTICE

For Optima models included in this TSB:
VINs that start with 5XX are designated Optima (QF) and produced in the United States. VINs that start with KNA are designated Optima (TF) are produced in South Korea.

SUBJECT: KNOCK SENSOR DETECTION SYSTEM – ECU LOGIC IMPROVEMENT (PI1803)

ROM ID INFORMATION TABLE:

Upgrade Event #382 (XMa), #383 (TF), #384 (QF), #385 (SL)

Model	Engine	IMMO	ECU P/No.	ROM ID	
				Previous	New
12MY Scr. (XMa)	2.4	Yes	39113-2G770 39113-2G775	2WD_XCC4RB3A 2WD_XCC4RB3B 2WD_XCC4RB3C 2WD_XCC4RB3D 2WD_XCC4RB3E 2WD_XCC4RB3F	2WD_XCC4RB3K
			39114-2G770	4WD_XCC4RB3A 2WD_XCC4RB3B 4WD_XCC4RB3C 4WD_XCC4RB3D 4WD_XCC4RB3E 4WD_XCC4RB3F	4WD_XCC4RB3L
		No	39113-2G760 39113-2G765	2WD_XCC4MB3A 4WD_XCC4MB3B 2WD_XCC4MB3C 2WD_XCC4MB3D 2WD_XCC4MB3E 2WD_XCC4MB3F	2WD_XCC4MB3K
			39114-2G760	4WD_XCC4MB3A 4WD_XCC4MB3C 4WD_XCC4MB3D 4WD_XCC4MB3E 4WD_XCC4MB3F	4WD_XCC4MB3L
13MY Scr. (XMa)	2.4	Yes	39113-2G771	2WD_XDC4RE0A 2WD_XDC4REAA 2WD_XDC4REAB 2WD_XDC4REAC 2WD_XDC4REAE 2WD_XDC4REAG	2WD_XDC4REAK
				2WD_XDC4READ 2WD_XDC4REAF 2WD_XDC4REAH	2WD_XDC4REAM
			39114-2G771	4WD_XDC4RE0A 4WD_XDC4REAA 4WD_XDC4REAB 4WD_XDC4REAC 4WD_XDC4REAE 4WD_XDC4REAG	4WD_XDC4REAL
				4WD_XDC4READ 4WD_XDC4REAF 4WD_XDC4REAH	4WD_XDC4REAN
		No	39113-2G761	2WD_XDC4ME0A 2WD_XDC4MEAA 2WD_XDC4MEAB 2WD_XDC4MEAC 2WD_XDC4MEAE 2WD_XDC4MEAG	2WD_XDC4MEAK
				2WD_XDC4MEAD 2WD_XDC4MEAF 2WD_XDC4MEAH	2WD_XDC4MEAM
			39114-2G761	4WD_XDC4ME0A 4WD_XDC4MEAA 4WD_XDC4MEAB 4WD_XDC4MEAC 4WD_XDC4MEAE 4WD_XDC4MEAG	4WD_XDC4MEAL
				4WD_XDC4MEAD 4WD_XDC4MEAF 4WD_XDC4MEAH	4WD_XDC4MEAN

SUBJECT: KNOCK SENSOR DETECTION SYSTEM – ECU LOGIC IMPROVEMENT (PI1803)

Model	Engine	IMMO	ECU P/No.	ROM ID	
				Previous	New
14MY Sor. (XMa)	2.4	Yes	39113-2GBK5 39114-2GBK5	2WD_FDC4RF3A 2WD_FDC4RG0A 2WD_FDC4RG0B 2WD_FEC4RG0C	2WD_FEC4RG1K
				2WD_FEC4RH2A 2WD_FEC4RH2B	2WD_FEC4RH2K
			39113-2GBL5	4WD_FDC4RF3A 4WD_FDC4RG0A 4WD_FDC4RG0B 4WD_FEC4RG0C	4WD_FEC4RG1L
				4WD_FEC4RH2A 4WD_FEC4RH2B	4WD_FEC4RH2L
		No	39113-2GBK0 39114-2GBK0	2WD_FDC4MF3A 2WD_FDC4MG0A 2WD_FDC4MG0B 2WD_FEC4MG0C	2WD_FEC4MG1K
				2WD_FEC4MH2A 2WD_FEC4MH2B	2WD_FEC4MH2K
			39113-2GBL0	4WD_FDC4MF3A 4WD_FDC4MG0A 4WD_FDC4MG0B 4WD_FEC4MG0C	4WD_FEC4MG1L
				4WD_FEC4MH2A 4WD_FEC4MH2B	4WD_FEC4MH2L
11MY Opt. (TF)	2.4 (ULEV)	Yes	39111-2G870 39112-2G870	TBC4R85A TBC4R86A TBC4R86B TBC4R86D	TBC4RB3K
			39111-2G871 39112-2G871	TBC4R86C TBC4R88A TBC4R88B TBC4RB3A TBC4RB3B TBC4RB3C	TBC4RB3L
		No	39111-2G860 39112-2G860	TBC4M85A TBC4M86A TBC4M86B TBC4M86D	TBC4MB3K
			39111-2G861 39112-2G861	TBC4M86C TBC4M88A TBC4M88B TBC4MB3A TBC4MB3B TBC4MB3C	TBC4MB3L

SUBJECT: KNOCK SENSOR DETECTION SYSTEM – ECU LOGIC IMPROVEMENT (PI1803)

Model	Engine	IMMO	ECU P/No.	ROM ID	
				Previous	New
11MY Opt. (TF)	2.4 (SULEV)	Yes	39111-2G875	TBS4R85A TBS4R86A TBS4R86B TBS4RF3E TBS4RF3G	TBS4RF3K
			3911102G876	TBS4R86C TBS4R88A TBS4R88B TBS4RB3A TBS4RB3B TBS4RF3F TBS4RF3H	TBS4RF3L
		No	39111-2G865	TBS4M85A TBS4M86A TBS4M86B TBS4MF3E TBS4MF3G	TBS4MF3K
			39111-2G866	TBS4M86C TBS4M88A TBS4M88B TBS4MB3A TBS4MB3B TBS4MF3F TBS4MF3H	TBS4MF3L
12MY Opt. (TF)	2.4 (ULEV)	Yes	39111-2G873 39112-2G873	TCC4RB3K TCC4REAK TCC4REAL TCC4REAM	TCC4REA5
		No	39111-2G863 39112-2G863	TCC4MB3K TCC4MEAK TCC4MEAL TCC4MEAM	TCC4MEA5
	2.4 (SULEV)	Yes	39111-2G878	TCS4RB3K TCS4REAK TCS4REAL TCS4REAM	TCS4REA5
		No	39111-2G868	TCS4MB3K TCS4MEAK TCS4MEAL TCS4MEAM	TCS4MEA5
13MY Opt. (TF)	2.4 (ULEV)	Yes	39111-2G902 39112-2G902	TDC4REAK TDC4RF0K TDC4RF3K TDC4RG1K TDC4RG1L TDC4RG1M	TDC4RG15
		No	39111-2G900 39112-2G900	TDC4MEAK TDC4MF0K TDC4MF3K TDC4MG1K TDC4MG1L TDC4MG1M	TDC4MG15

SUBJECT: KNOCK SENSOR DETECTION SYSTEM – ECU LOGIC IMPROVEMENT (PI1803)

Model	Engine	IMMO	ECU P/No.	ROM ID	
				Previous	New
13MY Opt. (TF)	2.4 (SULEV)	Yes	39111-2G903	TDS4REAK TDS4RF0K TDS4RF3K TDS4RG1K TDS4RG1L TDS4RG1M	TDS4RG15
		No	39111-2G901	TDS4MEAK TDS4MF0K TDS4MF3K TDS4MG1K TDS4MG1L TDS4MG1M	TDS4MG15
11-13MY Opt. (TF)	2.0T (ULEV)	Yes	39111-2G890 39111-2G892 39111-2G894	TBC0R95C TBC0R96A TBC0R97A TBC0R97B TBC0RB3A TBC0RC0A TDC0RF3L TCC0RC0K TCC0RC0L TCC0RC0M TDC0REAK TDC0RE5K TDC0RF3K	TDC0RF35
		No	39111-2G880 39111-2G882 39111-2G884	TBC0M95C TBC0M96A TBC0M97A TBC0M97B TBC0MB3A TBC0MC0A TDC0MF3L TCC0MC0L TCC0MC0K TCC0MC0M TDC0MEAK TDC0ME5K TDC0MF3K	TDC0MF35
13MY Opt. (TF)	2.0T (ULEV)	Yes	39111-2G895	TDC0RG1K TDC0RG1L	TDC0RG15
		No	39111-2G885	TDC0MG1K TDC0MG1L	TDC0MG15
12MY Opt. (QF)	2.4 (ULEV)	Yes	39111-2G872 39112-2G872	TCC4RB3A TCC4REAA TCC4REAB TCC4REAC	TCC4REA1
		No	39111-2G862 39112-2G862	TCC4MB3A TCC4MEAA TCC4MEAB TCC4MEAC	TCC4MEA1
	2.4 (SULEV)	Yes	39111-2G877	TCS4RB3A TCS4REAA TCS4REAB TCS4REAC	TCS4REA1
		No	39111-2G867	TCS4MB3A TCS4MEAA TCS4MEAB TCS4MEAC	TCS4MEA1

SUBJECT: KNOCK SENSOR DETECTION SYSTEM – ECU LOGIC IMPROVEMENT (PI1803)

Model	Engine	IMMO	ECU P/No.	ROM ID	
				Previous	New
13MY Opt. (QF)	2.4 (ULEV)	Yes	39111-2G874 39112-2G874	TDC4REAA TDC4RF0A TDC4RF3A TDC4RF3B TDC4RF3C	TDC4RF31
		No	39111-2G864 39112-2G864	TDC4MEAA TDC4MF0A TDC4MF3A TDC4MF3B TDC4MF3C	TDC4MF31
	2.4 (SULEV)	Yes	39111-2G879	TDS4REAA TDS4RF0A TDS4RF3A TDS4RF3B TDS4RF3C	TDS4RF31
		No	39111-2G869	TDS4MEAA TDS4MF0A TDS4MF3A TDS4MF3B TDS4MF3C	TDS4MF31
14MY Opt. (QF)	2.4 (ULEV)	Yes	39108-2GBJ0 39118-2GBJ0	TEC4RH2A TEC4RH2B	TEC4RH21
		No	39108-2GBH0 39118-2GBH0	TEC4MH2A TEC4MH2B	TEC4MH21
	2.4 (SULEV)	Yes	39108-2GBJ5	TES4RH2A TES4RH2B	TES4RH21
		No	39108-2GBH5	TES4MH2A TES4MH2B	TES4MH21
12-13MY Opt. (QF)	2.0T (ULEV)	Yes	39111-2G891 39111-2G893	TCC0RC0A TCC0RC0B TCC0RC0C TDC0RF3B TDC0RE3A TDC0RE5A TDC0REAA TDC0RF3A	TDC0RF31
		No	39111-2G881 39111-2G883	TCC0MC0A TCC0MC0B TCC0MC0C TDC0MF3B TDC0ME3A TDC0ME5A TDC0MEAA TDC0MF3A	TDC0MF31
		Yes	39111-2G895	TDC0RG1A TDC0RG1B	TDC0RG11
		No	39111-2G885	TDC0MG1A TDC0MG1B	TDC0MG11
14MY Opt. (QF)	2.0T (ULEV)	Yes	39108-2GBK5	TEC0RH2A TEC0RH2B	TEC0RH21
		No	39108-2GBK0	TEC0MH2A TEC0MH2B	TEC0MH21

SUBJECT: KNOCK SENSOR DETECTION SYSTEM – ECU LOGIC IMPROVEMENT (PI1803)

Model	Engine	IMMO	ECU P/No.	ROM ID	
				Previous	New
11-13MY Spo. (SL)	2.0T (ULEV)	Yes	39113-2G870 39114-2G870 39113-2G871 39114-2G871 39113-2G872 39114-2G872	SCC0RB1A SCC0RB3A SCC0RC0A SDC0RF3B SCC0RC0B SDC0RE3A SDC0RE5A SDC0REAA SDC0RF3A	SDC0RF3K
		No	39113-2G860 39114-2G860 39113-2G861 39114-2G861 39113-2G862 39114-2G862	SCC0MB1A SCC0MB3A SCC0MC0A SDC0MF3B SCC0MC0B SDC0ME3A SDC0ME5A SDC0MEAA SDC0MF3A	SDC0MF3K
13MY Spo. (SL)	2.0T (ULEV)	Yes	39113-2G873 39114-2G873	SDC0RG1A SDC0RG1B	SDC0RG1K
		No	39113-2G863 39114-2G863	SDC0MG1A SDC0MG1B	SDC0MG1K

To verify the vehicle is affected, be sure to check the Calibration Identification of the vehicle's ECM ROM ID and reference the Information Table as necessary.

★ NOTICE

Prior to performing the ECU upgrade, be sure to check that the KDS is fully charged.

1. Connect the VCI-II to the OBD-II connector, located under the driver's side of the instrument panel.



★ NOTICE

The ECU upgrade function on KDS operates wirelessly. It is not necessary to perform the upgrade via USB cable.

2. With the ignition ON, turn ON the KDS tablet. Select **KDS** from the home screen.



SUBJECT: KNOCK SENSOR DETECTION SYSTEM – ECU LOGIC IMPROVEMENT (PI1803)

3. Confirm communication with VCI (A) and then configure the vehicle (B) using the **AUTO VIN** (C) feature.



4. Select **ECU Upgrade**.



5. The KDS will check the server for recently uploaded Events and then automatically download **Upgrade Event #382 (XMa), #383 (TF), #384 (QF), or #385 (SL).**

★ NOTICE

The vehicle must be identified in Vehicle Selection to download an Event for that vehicle.



KDS screenshot shown above is for demonstration purposes only. Events shown in screenshot are not applicable to this bulletin.

6. Select **Auto Mode**.

★ NOTICE

Do NOT attempt to perform a Manual Mode upgrade <u>UNLESS Auto Mode fails</u>. Always follow the instructions given on the KDS in either Auto or Manual mode.



SUBJECT: KNOCK SENSOR DETECTION SYSTEM – ECU LOGIC IMPROVEMENT (PI1803)

7. Select the **ENGINE** system under the System selection menu.

   Touch **ID Check** (D) and confirm that the latest update is available.

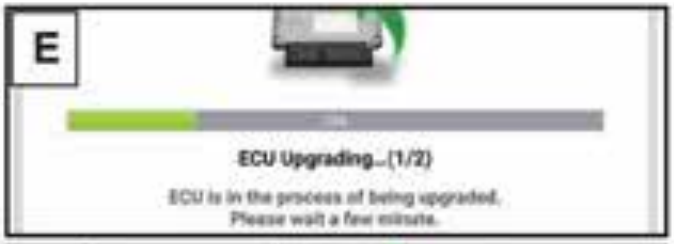
   Select **Upgrade Event #382 (XMa), #383 (TF), #384 (QF), or #385 (SL)** and select **Upgrade** to continue.

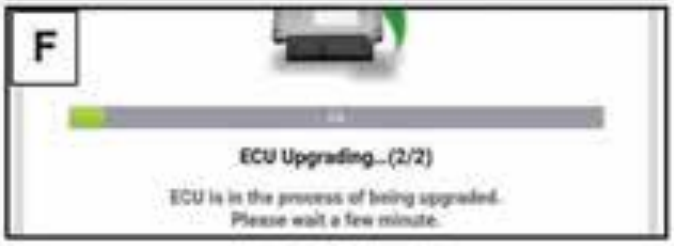


8. The ECU upgrade will begin and the progress of the upgrade will appear on the bar graph. Upgrade part (1/2) (E) will download the upgrade event to the VCI-II. Upgrade part (2/2) (F) will upgrade the ECU.

★ NOTICE

Do not touch the system buttons (like 'Back', 'Home', 'etc.') while performing ECU Upgrade.





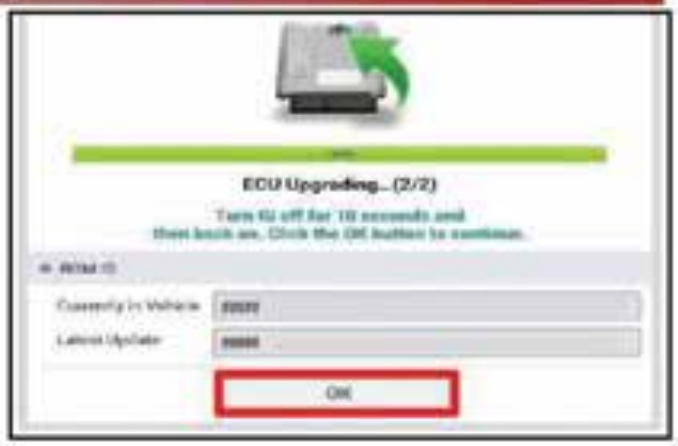
9. If a "Communication Fail" screen appears, verify that the VCI-II and KDS are communicating properly. Touch **OK** and restart the procedure from step 4.

★ NOTICE

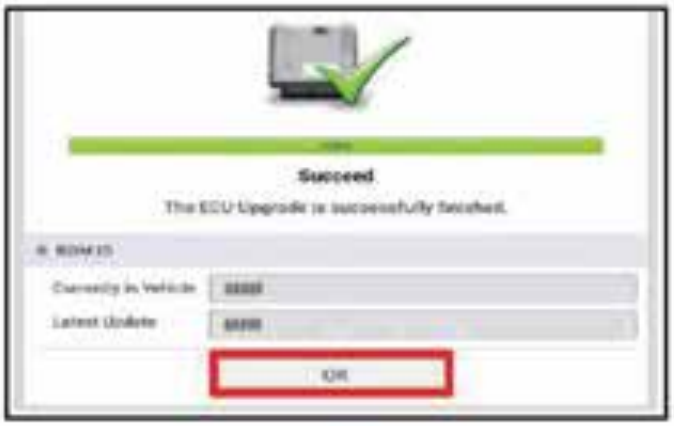
If an error notice continues to appear or if the upgrade cannot be performed, DO NOT disconnect the KDS/VCI-II. Contact GIT America Help Desk at (888) 542-4371 or Techline.



10. When instructed on the KDS, turn the ignition **OFF** for ten (10) seconds then back on. Touch **OK** to continue.



11. Once the upgrade is complete, touch **OK** to finalize the procedure.



12. When prompted, select **YES** to check for Diagnostic Trouble Codes (DTC) and erase any DTCs stored such as EPS, ESC, and TPMS that may have been set during the upgrade.



13. Start the engine to confirm proper operation of the vehicle.

SUBJECT: KNOCK SENSOR DETECTION SYSTEM – ECU LOGIC IMPROVEMENT (PI1803)

Manual Upgrade Procedure:

*** NOTICE**

The manual upgrade should ONLY be performed if the automatic upgrade fails.

If the automatic upgrade fails, turn the ignition OFF for about 10 seconds then place it back in the ON position to reset the control unit BEFORE performing manual upgrade.

See table below for Manual Mode passwords.

Manual Mode ECU Upgrade Passwords

Model	Menu	Password
XMA	XMA 2.4GDI -IMMO 12MY(2WD) : 39113-2G760/65 [2WD_XCC4MB3A/3B/3C/3D/3E/3F]	1365
	XMA 2.4GDI +IMMO 12MY(2WD) : 39113-2G770/75 [2WD_XCC4RB3A/3B/3C/3D/3E/3F]	1375
	XMA 2.4GDI -IMMO 12MY(4WD) : 39114-2G760 [4WD_XCC4MB3A/3B/3C/3D/3E/3F]	1460
	XMA 2.4GDI +IMMO 12MY(4WD) : 39114-2G770 [4WD_XCC4RB3A/3C/3D/3E/3F]	1470
	XMA 2.4GDI -IMMO 13MY(2WD) : 39113-2G761 [2WD_XDC4ME0A/AA/AB/AC/AE/AG]	1361
	XMA 2.4GDI +IMMO/SMK 13MY(2WD) : 39113-2G771 [2WD_XDC4RE0A/AA/AB/AC/AE/AG]	1371
	XMA 2.4GDI -IMMO 13MY(4WD) : 39114-2G761 [4WD_XDC4ME0A/AA/AB/AC/AE/AG]	1461
	XMA 2.4GDI +IMMO/SMK 13MY(4WD) : 39114-2G771 [4WD_XDC4RE0A/AA/AB/AC/AE/AG]	1471
	XMA 2.4GDI -IMMO 13MY(2WD) : 39113-2G761 [2WD_XDC4MEAD/AF/AH]	1362
	XMA 2.4GDI +IMMO/SMK 13MY(2WD) : 39113-2G771 [2WD_XDC4READ/AF/AH]	1372
	XMA 2.4GDI -IMMO 13MY(4WD) : 39114-2G761 [4WD_XDC4MEAD/AF/AH]	1462
	XMA 2.4GDI +IMMO/SMK 13MY(4WD) : 39114-2G771 [4WD_XDC4READ/AF/AH]	1472
	XMA 2.4GDI -IMMO 14MY(2WD) : 39113/14-2GBK0 [2WD_FDC4MF3A/G0A/G0B/G0C]	1420
	XMA 2.4GDI +IMMO/SMK 14MY(2WD) : 39113/14-2GBK5 [2WD_FDC4RF3A/G0A/G0B/G0C]	1425
	XMA 2.4GDI -IMMO 14MY(4WD) : 39113-2GBL0 [4WD_FDC4MF3A/G0A/G0B/G0C]	1320
	XMA 2.4GDI +IMMO/SMK 14MY(4WD) : 39113-2GBL5 [4WD_FDC4RF3A/G0A/G0B/G0C]	1325
	XMA 2.4GDI -IMMO 14MY(2WD) : 39113/14-2GBK0 [2WD_FEC4MH2A/B]	1421
	XMA 2.4GDI +IMMO/SMK 14MY(2WD) : 39113/14-2GBK5 [2WD_FEC4RH2A/B]	1426
	XMA 2.4GDI -IMMO 14MY(4WD) : 39113-2GBL0 [4WD_FEC4MH2A/B]	1321
	XMA 2.4GDI +IMMO/SMK 14MY(4WD) : 39113-2GBL5 [4WD_FEC4RH2A/B]	1326
TF	TF 2.0T-GDI -IMMO 11MY~13MY (ULEV) : 39111-2G880/82/84	1184
	TF 2.0T-GDI +IMMO/SMK 11MY~13MY (ULEV) : 39111-2G890/92/94	1194
	TF 2.0T-GDI -IMMO 13MY(ULEV) : 39111-2G885	1185
	TF 2.0T-GDI +IMMO/SMK 13MY(ULEV) : 39111-2G895	1195
	TF 2.4GDI -IMMO 11MY(ULEV) : 39111/12-2G860	1260
	TF 2.4GDI +IMMO 11MY(ULEV) : 39111/12-2G870	1270
	TF 2.4GDI -IMMO 11MY(ULEV) : 39111/12-2G861	1261
	TF 2.4GDI +IMMO 11MY(ULEV) : 39111/12-2G871	1271
	TF 2.4GDI -IMMO 11MY(SULEV) : 39111-2G865	1165
	TF 2.4GDI +IMMO 11MY(SULEV) : 39111-2G875	1175
	TF 2.4GDI -IMMO 11MY(SULEV) : 39111-2G866	1166
	TF 2.4GDI +IMMO 11MY(SULEV) : 39111-2G876	1176
	TF 2.4GDI -IMMO 12MY(ULEV) : 39111/12-2G863	1263
	TF 2.4GDI +IMMO 12MY(ULEV) : 39111/12-2G873	1273
	TF 2.4GDI -IMMO 12MY(SULEV) : 39111-2G868	1168
	TF 2.4GDI +IMMO 12MY(SULEV) : 39111-2G878	1178
	TF 2.4GDI -IMMO 13MY(ULEV) : 39111/12-2G900	1200
	TF 2.4GDI +IMMO/SMK 13MY(ULEV) : 39111/12-2G902	1202
	TF 2.4GDI -IMMO 13MY(SULEV) : 39111-2G901	1101
	TF 2.4GDI +IMMO/SMK 13MY(SULEV) : 39111-2G903	1103

SUBJECT: KNOCK SENSOR DETECTION SYSTEM – ECU LOGIC IMPROVEMENT (PI1803)

Model	Menu	Password
QF	QF 2.0T-GDI -IMMO 12~13MY (ULEV) : 39111-2G881/83	1183
	QF 2.0T-GDI +IMMO/SMK 12~13MY (ULEV) : 39111-2G891/93	1193
	QF 2.0T-GDI -IMMO 13MY(ULEV) : 39111-2G885	1185
	QF 2.0T-GDI +IMMO/SMK 13MY(ULEV) : 39111-2G895	1195
	QF 2.0T-GDI -IMMO 14MY(ULEV) : 39108-2GBK0	0820
	QF 2.0T-GDI +IMMO/SMK 14MY(ULEV) : 39108-2GBK5	0825
	QF 2.4GDI -IMMO 12MY(ULEV) : 39111/12-2G862	1262
	QF 2.4GDI +IMMO 12MY(ULEV) : 39111/12-2G872	1272
	QF 2.4GDI -IMMO 12MY(SULEV) : 39111-2G867	1167
	QF 2.4GDI +IMMO 12MY(SULEV) : 39111-2G877	1177
	QF 2.4GDI -IMMO 13MY(ULEV) : 39111/12-2G864	1264
	QF 2.4GDI +IMMO/SMK 13MY(ULEV) : 39111/12-2G874	1274
	QF 2.4GDI -IMMO 13MY(SULEV) : 39111-2G869	1169
	QF 2.4GDI +IMMO/SMK 13MY(SULEV) : 39111-2G879	1179
	QF 2.4GDI -IMMO 14MY(ULEV) : 39108/18-2GBH0	1820
	QF 2.4GDI +IMMO/SMK 14MY(ULEV) : 39108/18-2GBJ0	1821
	QF 2.4GDI -IMMO 14MY(SULEV) : 39108-2GBH5	0825
	QF 2.4GDI +IMMO/SMK 14MY(SULEV) : 39108-2GBJ5	0826
SL	SL 2.0T-GDI -IMMO 11~13MY (ULEV) : 39113/14-2G860/61/62	1462
	SL 2.0T-GDI +IMMO/SMK 11~13MY (ULEV) : 39113/14-2G870/71/72	1472
	SL 2.0T-GDI -IMMO 13MY(ULEV) : 39113/14-2G863	1463
	SL 2.0T-GDI +IMMO/SMK 13MY(ULEV) : 39113/14-2G873	1473

1. Within the ECU Upgrade screen displayed, select **Manual Mode**.
2. Select the **ENGINE** system under the System selection menu. Select **Upgrade Event #382 (XMa), #383 (TF), #384 (QF), or #385 (SL)** and select **Upgrade** to continue.
3. Select the appropriate control unit part number with reference to the ROM ID Information Table on page 3-8, and select **OK**.
4. Enter the appropriate password from the Manual Mode password table above and select **OK**.
5. The upgrade will begin and the progress of the upgrade will appear on the bar graph.
6. When instructed on the KDS, turn the ignition **OFF** for ten (10) seconds then back on. Touch **OK** to continue.
7. Once the upgrade is complete, touch **OK** to finalize the procedure.
8. When prompted, select **YES** to check for Diagnostic Trouble Codes (DTC) and erase any DTCs stored such as EPS, ESC, and TPMS that may have been set during the upgrade.
9. Start the engine to confirm proper operation of the vehicle.

SUBJECT: KNOCK SENSOR DETECTION SYSTEM – ECU LOGIC IMPROVEMENT (PI1803)

AFFECTED VEHICLE RANGE:

Model	Production Date Range
11-13MY Optima (QF/TF)	August 12, 2010 through September 27, 2013
14MY Optima (QF)	August 28, 2013 through May 15, 2014
12-14MY Sorento (XMa)	April 19, 2011 through February 10, 2014
11-13MY Sportage (SL)	December 30, 2010 through August 30, 2013

WARRANTY INFORMATION (PI1803A/B/C/D):

N Code: N99 C Code: C99

Model	Claim Type	Causal P/N	Qty.	Repair Description	Labor Op Code	Op Time	Replacement P/N	Qty.
TF (11-13MY)	R	39111 2G870	0	(PI1803A/B/C/D) KSDS - ECU Logic Improvement	180133R0	0.3 M/H	N/A	0
QF (12-14MY)	R	39111 2G872	0	(PI1803A/B/C/D) KSDS - ECU Logic Improvement	180A22R0	0.3 M/H	N/A	0
XMa (12-14MY)	R	39113 2G770	0	(PI1803A/B/C/D) KSDS - ECU Logic Improvement	180A21R0	0.3 M/H	N/A	0
SL (11-13MY)	R	39113 2G860	0	(PI1803A/B/C/D) KSDS - ECU Logic Improvement	180134R0	0.3 M/H	N/A	0

*** NOTICE**

VIN inquiry data for this repair is provided for tracking purposes only. Kia retailers should reference PI1803* when accessing the WebDCS system.

PE19-004

KIA

TAB 7 _ PI180 WX_TSB

	GROUP	MODEL
KIA	**Product Improvement**	**2011-2014MY Optima (QF/TF) 2012-2014MY Sorento (XMa) 2011-2013MY Sportage (SL)**
	NUMBER	DATE
	PI1803W/X	**November 2018**

PRODUCT IMPROVEMENT CAMPAIGN

SUBJECT: ENGINE REPLACEMENT INSTRUCTIONS FOR DTC P1326 (PI1803W/X)

This bulletin provides information related to the Technical Service Bulletin previously published in November 2018 (PI1803) titled "Knock Sensor Detection System - ECU Logic Improvement". Specifically, this bulletin provides instructions on which procedures to follow if, after installation of the KSDS, any one of the subject vehicles below returns to the dealer with Diagnostic Trouble Code ("DTC"), P1326.

- All 2011-2013MY Optima (QF/TF) vehicles equipped with the 2.4L Gasoline Direct Injection (GDI) and 2.0L Turbocharged GDI (T-GDI) engines, produced from August 12, 2010 through September 27, 2013;
- All 2014 MY Optima (QF) vehicles equipped with the 2.4L Gasoline Direct Injection (GDI) and 2.0L Turbocharged GDI (T-GDI) engines, produced at KMMG from August 28, 2013 through May 15, 2014,
- All 2012-2014 MY Sorento vehicles equipped with the 2.4L Gasoline Direct Injection (GDI) engines, produced from April 19, 2011 through February 10, 2014; and
- All 2011-2013 MY Sportage vehicles equipped with the 2.0L Turbo Gasoline Direct Injection (T-GDI) engines, produced from December 30, 2010 through August 30, 2013.

If DTC P1326 is present, first check for any wiring signal interference following the procedure set forth below before determining whether an engine replacement is necessary. Based on the results of the Wiring Signal Interference Check, dealers are to perform either the Knock Sensor Wiring Repair or the Engine Long-Block Replacement according to the procedures in this TSB.

If the vehicle's engine is already seized or severely knocking, dealers are to perform the Engine Long-Block Replacement **and** the Wiring Signal Interference Check according to the procedures in this TSB.

Before conducting the procedure, verify the vehicle is included in the list of affected VINs.

★ NOTICE

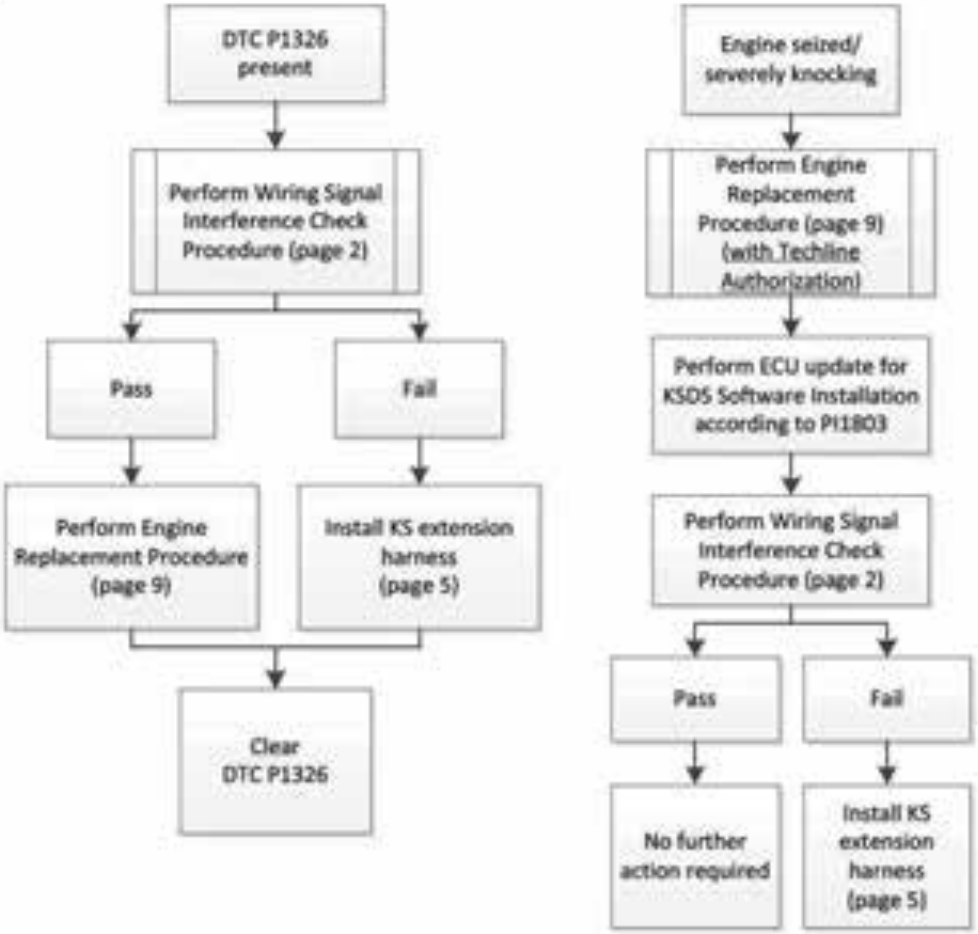
To ensure complete customer satisfaction, always remember to refer to WebDCS Warranty Coverage (validation) Inquiry Screen (Service → Warranty Coverage → Warranty Coverage Inquiry) for a list of any additional campaigns that may need to be performed on the vehicle before returning it to the customer.

File Under: <Product Improvement>

Circulate To: ☒ General Manager ☒ Service Manager ☒ Parts Manager ☒ Service Advisors ☒ Technicians ☒ Body Shop Manager ☐ Fleet Repair

SUBJECT: ENGINE REPLACEMENT INSTRUCTIONS FOR DTC P1326 (PI1803W/X)

Flow Chart:



Wiring Signal Interference Check Procedure:

1. Using the KDS, perform a Fault Code Search and confirm DTC P1326 is present.
   - If P1326 is present, proceed to the next step to perform the wiring signal interference check.
   - If the engine is seized or severely knocking, proceed to the engine replacement procedure on page 9.



2. Start/warm up the engine and ensure **ENGINE OIL** is at operating temperature (176°F).



3. From the KDS Home Screen, select S/W Management.



4. Select Engine Control → Wiring Signal Interference Check.



5. Ensure the engine is on and at idle and **ENGINE OIL** temperature is at 176°F degrees or higher. Select OK to proceed.



5b. Select OK to proceed.

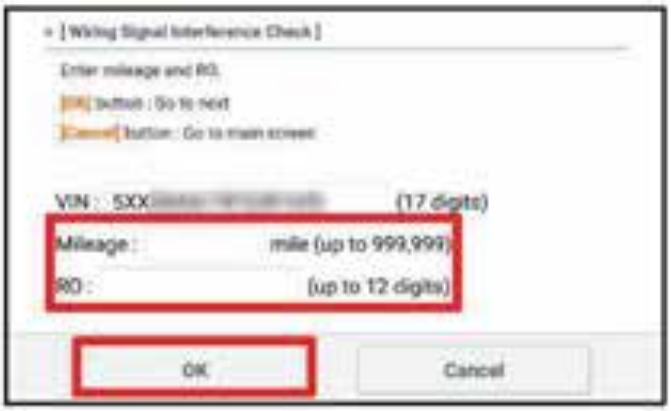
NOTE: This test should only be performed if Knock Sensor Detection System - ECU Logic Improvement (PI1803) has previously been completed.



5c. If the conditions are not met, a pop-up as shown will be displayed.



6. Enter vehicle mileage and RO number (VIN is automatically populated).



7. Wiring Signal Interference Check test will begin and take about three (3) minutes to complete. **NOTE**: Do not push on the accelerator pedal.



- If the result is "OK", turn the engine off and proceed to the Engine Replacement procedure on page 9.



- If the result is "NOT OK", turn the engine off and proceed to **step 2** of the Knock Sensor (KS) Extension Harness Installation procedure on page 5.



KS Extension Harness Installation Procedure:

NOTE: Photos below are from a 15MY Optima (QF). Components and their location may vary in different models.

1. Inspect the ECU harness (A) and verify if the Knock Sensor wiring extension harness (B) has previously been installed.

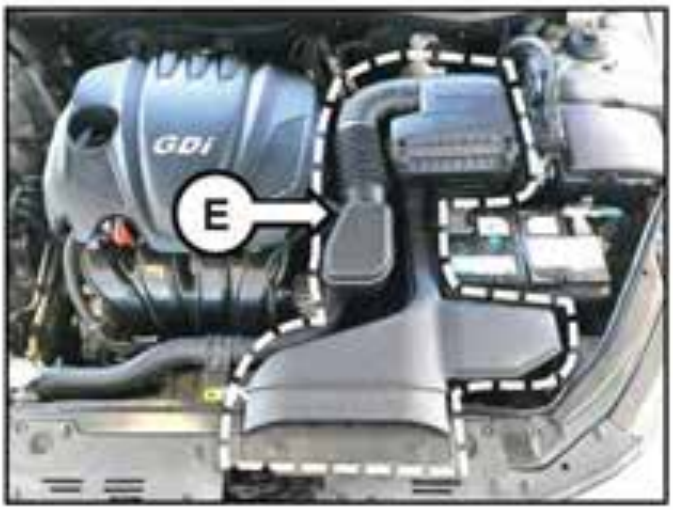
   NOTE: To identify the extension harness (B), look for an external harness (B) which should be cable-tied to the existing wiring harness (A) leading by the intake manifold (C) to the knock sensor (D), as shown.

   - If the extension harness (B) has been installed, no further action is required.
   - If the extension harness (B) has not been installed, proceed to the next step.

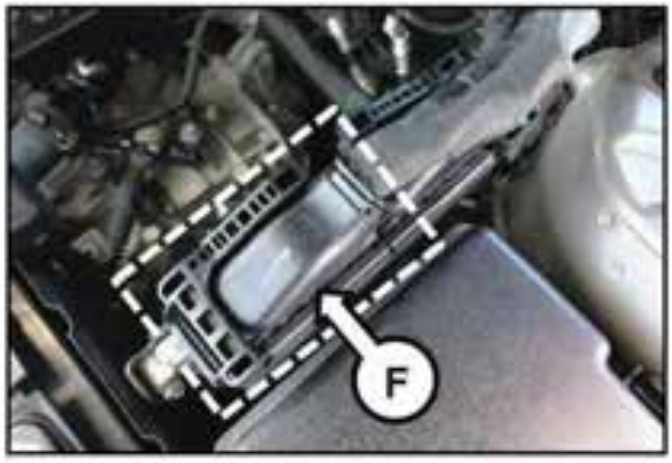




2. Remove the air cleaner and duct assembly (E).



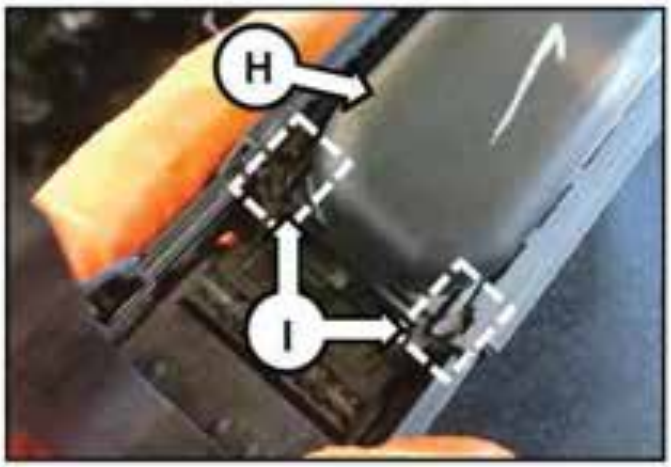
3. Disconnect the ECU connector (F).



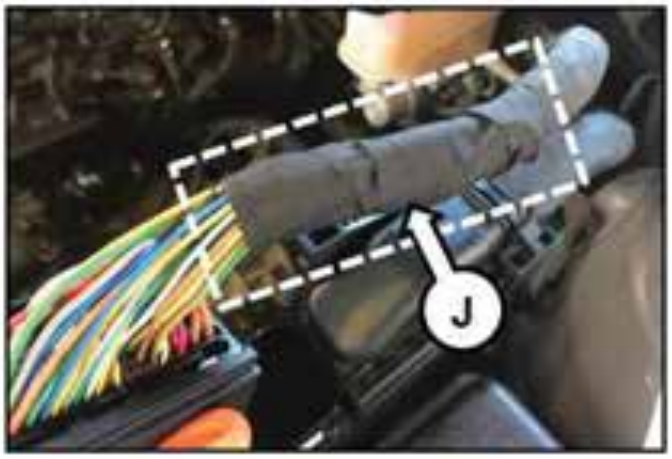
4. Cut the existing cable-tie (G) from the connector.



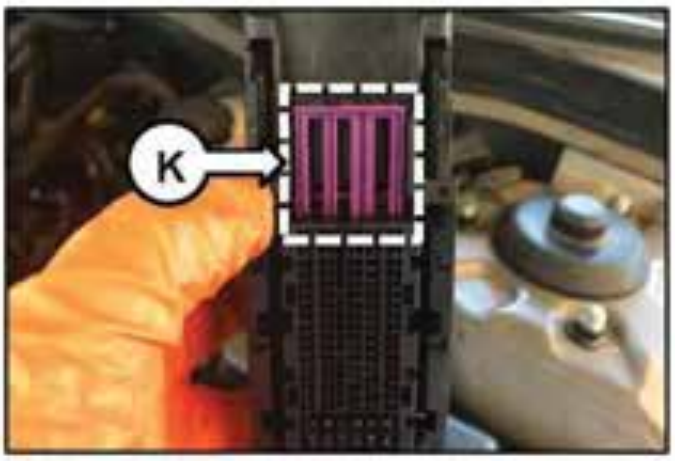
5. Remove the ECU connector cover (H) by carefully unclipping the two (2) tabs (I) and sliding the cover (H) towards the tabs (I).



6. Carefully remove the electrical tape (J) to expose the harness wires.



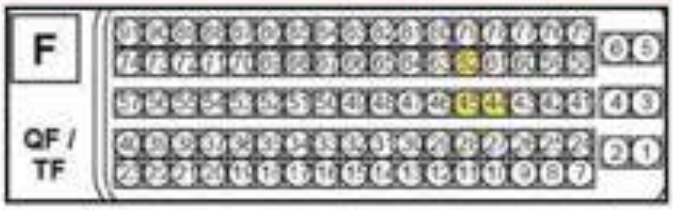
7. Remove the pin retainer (K).



8. Locate the three (3) knock sensor circuit terminals from the ECU connector (F). Refer to the "Schematic Diagrams → Engine Electrical System → Engine Control System → Schematic Diagrams" chapter of the applicable ETM on KGIS.

44. Knock Sensor Shielded Ground
45. Knock Sensor Ground
62. Knock Sensor Interface (Signal)

Click here to see a video of terminal removal.





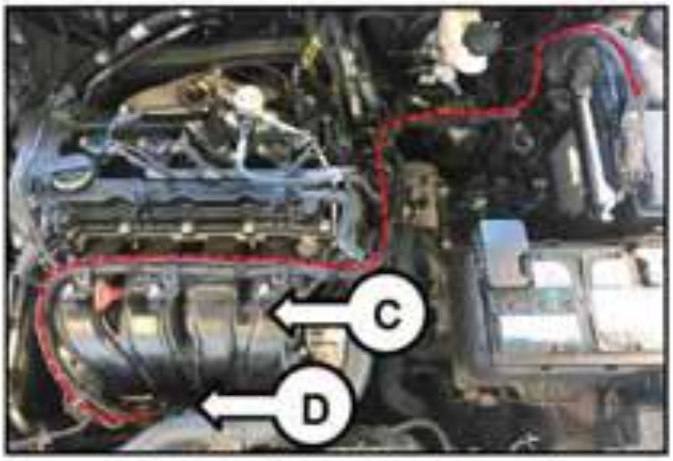
9. Remove the three (3) terminals **one at a time** and insert the new terminals of the extension harness into the ECU connector (F). Reinstall pin retainer (K) and reassemble the connector (F).

Pin	Extension Wire Color
44	Blue
45	Black
62	Red

NOTE: Be sure to note the rotational position of the terminals during removal. They are directional and need to be reinstalled in the same "clock" position.



10. Route the extension harness (B) along the existing harness (A) leading by the intake manifold (C) to the knock sensor (D), as shown.



*** IMPORTANT**

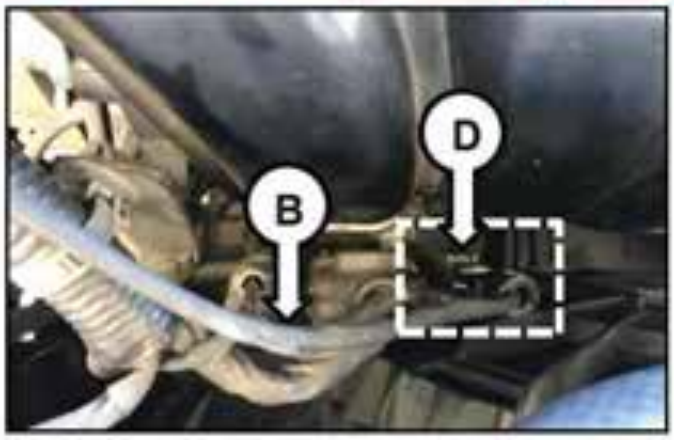
The harness (B) must be routed above and secured to the harness protector (L1) and UNDER the Breather Hose (L2) and Camshaft Position Sensor (L3).





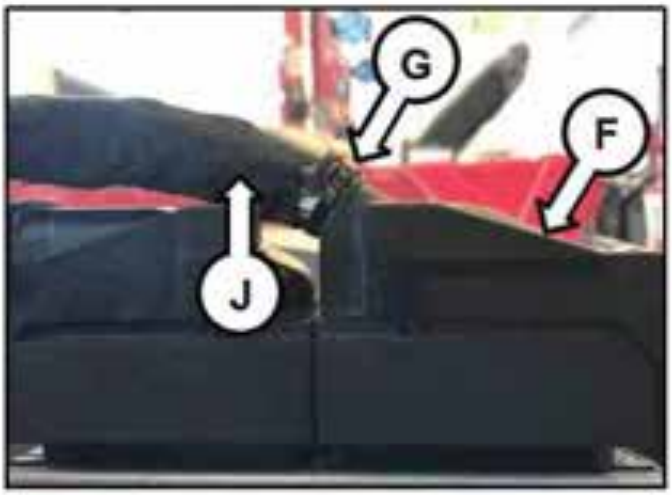


11. Connect the extension harness (B) to the knock sensor (D).

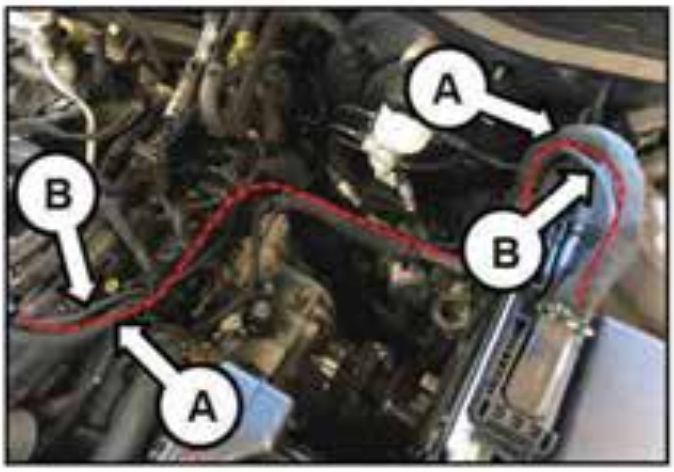


12. Cut off and discard the three (3) old knock sensor circuit terminals and the old knock sensor connector and secure the remaining wires to the new extension harness using the supplied electrical tape. **NOTE**: Complete removal of the old knock sensor wires is not necessary. Only remove the old terminals and connector.

13. Secure the extension harness at the connector (F) by replacing the cable-tie (G) removed in step 4 with a new supplied cable-tie and the electrical tape (J) removed in step 6 with new supplied electrical tape.



14. Secure the extension harness (B) to the existing harness (A) using the supplied cable-ties. Tuck and secure any excess wiring of the extension harness near the ECU with cable-tie.



15. Reinstall all removed components in the reverse order of removal.

16. Erase the P1326 DTC with the KDS and start the engine to confirm proper operation.

Engine Replacement Procedure:

1. Remove the engine assembly by referring to the "Engine And Transmission (Transaxle) Assembly → Engine And Transmission (Transaxle) Assembly → Repair procedures" chapter in the applicable Shop Manual on KGIS.

   Refer to TSB ENG190 for information regarding engine replacement practices.



2. After removal of the engine from the vehicle, remove all components that will need to be transferred by referring to the applicable Shop Manual on KGIS.

3. Place the new engine block on an engine stand.

4. Install all removed components from the old engine block onto the new engine block utilizing all parts from Service Kit I and II. Be advised of notes below.

Notes:

High Pressure Pump & Roller Tappet:

- Refer to TSB ENG083 for special attention and handling procedures of GDI-specific components.
- When installing the high pressure pump and roller tappet onto the new engine, apply engine oil to the roller tappet, and O-rings of the high pressure pump.

Tightening torques of pump bolts:
9.4 – 10.9 lb.ft (12.8 – 14.7 N.m, 1.3 – 1.5 kgf.m)

Tightening torques of pipe flare nut:
19.5 – 23.9 lb.ft (26.5 – 32.4 N.m, 2.7 – 3.3 kgf.m)

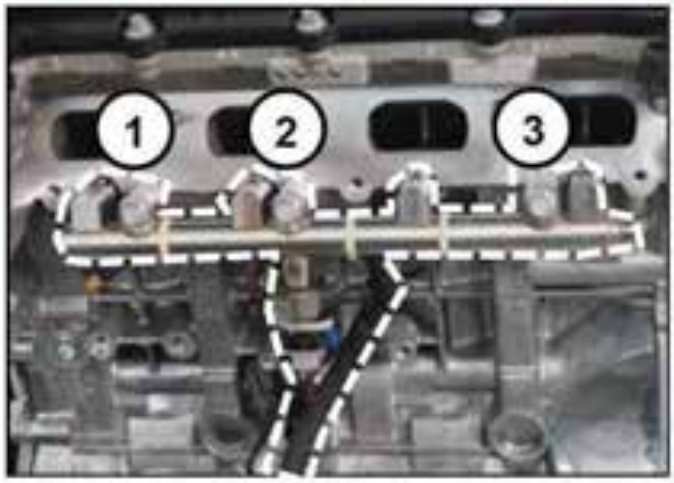


*** NOTICE**

Refer to TSB ENG083 for gasoline direct injection (GDI) specific information, including related warnings and cautions for handling high fuel pressure system components.

Delivery Pipe:

- Refer to TSB ENG083 for special attention and handling procedures of GDI-specific components.
- Prior to installing the delivery pipe, be sure to replace all of the injector O-rings and injector retainers.
- Prior to installing the delivery pipe, apply engine oil to the injector O-rings.
- When installing the delivery pipe, use caution not to damage the tip of the injector.
- Be sure to replace the delivery pipe retaining bolts and torque them in the sequence shown.



Tightening torque of bolts:
13.7 – 17.4 lb.ft (18.6 – 23.5 N.m, 1.9 – 2.4 kgf.m)

*** NOTICE**

Combustion seals must be compressed after installation and before attempting to install into the cylinder head. Use SST 09353 2B000 (refer to TSB ENG083).

Dipstick Tube & Dipstick:

- Prior to installing the new tube, lubricate the o-ring located at the bottom of the tube with engine oil.
- Install the red dipstick included in Service Kit I.

Tightening torque of bolt:
5.8 – 8.7 lb.ft (7.8 – 11.8 N.m, 0.8 - 1.2 kgf.m)



Intake Manifold:

- Prior to installation, replace the intake manifold gaskets.
- Torque bolts in the sequence shown.

Tightening torque of bolts:
13.7 – 17.4 lb.ft (18.6 – 23.5 N.m, 1.9 – 2.4 kgf.m)

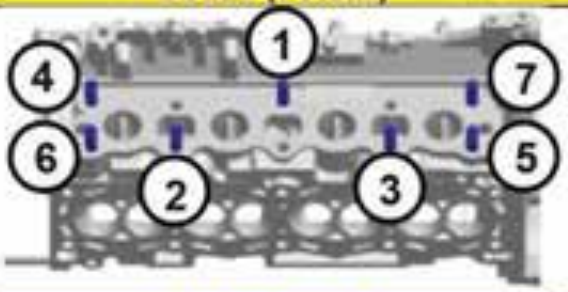


Exhaust Manifold:

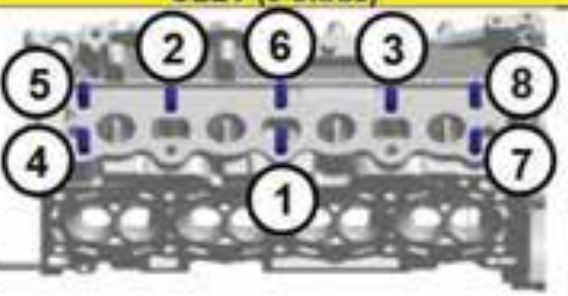
- All engines supplied under this Product Improvement Campaign have the exhaust manifold studs configured for SULEV engines.
- Using the pictures to the right, check the exhaust manifold stud location and quantity. Relocate as required for ULEV engines and obtain one (1) extra from the removed engine.
- Prior to installation, replace the exhaust manifold gasket and front muffler gasket.
- Torque nuts in the sequence shown.

Tightening torque of nuts:
36.2 – 39.7 lb.ft (49.0 – 53.9 N.m, 5.0 – 5.5 kgf.m)

SULEV (7 studs)



ULEV (8 studs)



***For 14MY Sorento (XMa) vehicles only: check the underhood emissions label and record whether the label references ULEV or SULEV. This information is needed to select/order the correct replacement engine.**


KIA MOTORS CORPORATION
VEHICLE EMISSION CONTROL INFORMATION

Conforms to regulations : 2014 MY

U.S.EPA : T2B5 LDV OBD : CA II Fuel : Gasoline

California : ULEV PC OBD : CA II Fuel : Gasoline

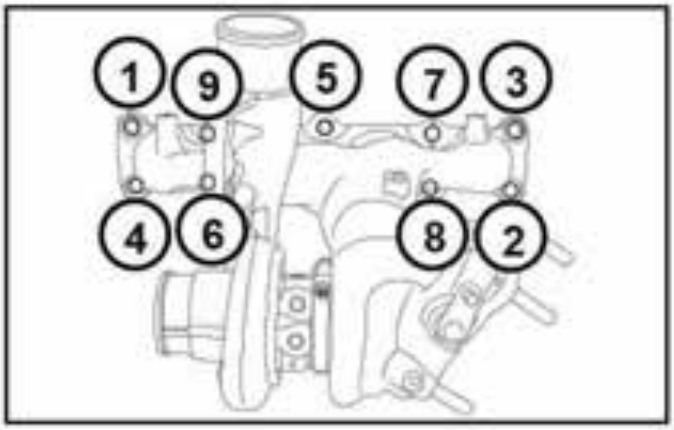
Engine : EKMXR0150DRE

No adjustments needed

A402

- On Turbo engines, replace the turbocharger oil feed line and gaskets.

Tightening torque of oil feed line bolt:
8.7 – 13.0 lb.ft (11.8 – 17.7 N.m, 1.2 – 1.8 kgf.m)
Tightening torque of oil feed line nuts:
5.8 – 8.7 lb.ft (7.8 – 11.8 N.m, 0.8 – 1.2 kgf.m)
Tightening torque of oil drain line nuts and bolts:
5.8 – 8.7 lb.ft (7.8 – 11.8 N.m, 0.8 – 1.2 kgf.m)



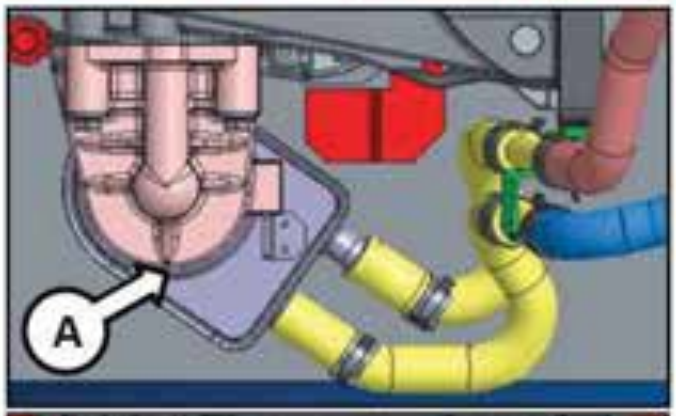
- Torque exhaust manifold nuts in the sequence shown.

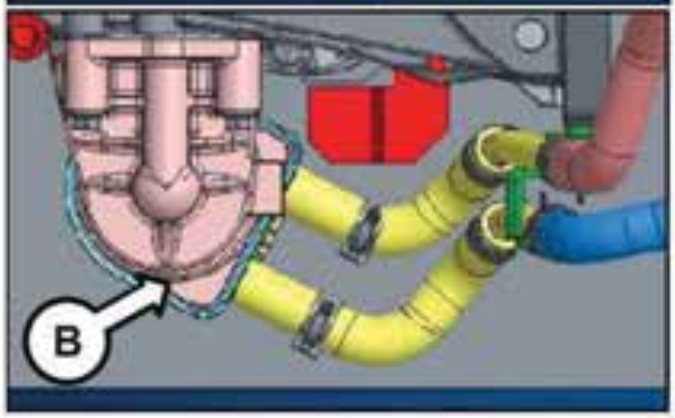
Tightening torque of nuts:
36.2 – 39.7 lb.ft (49.0 – 53.9 N.m, 5.0 – 5.5 kgf.m)

Oil Cooler Tube Assembly:

New engines may be supplied with a different oil cooler. Use steps below to determine the need for a replacement oil cooler tube assembly.

- If the new engine's (bigger) oil cooler (A) does not match the old engine's (smaller) oil cooler (B), replace the oil cooler tube assembly with the improved part. See parts table on page 15.
- If the new engine's (bigger) oil cooler (A) matches the old engine's (bigger) oil cooler (A), reuse the old engine's oil cooler tube assembly.
- If the new engine's (smaller) oil cooler (B) matches the old engine's (smaller) oil cooler (B), reuse the old engine's oil cooler tube assembly.





Drive Plate / Flywheel Bolts:

- Replace all seven (7) drive plate (AT) or flywheel (MT) bolts.

Tightening torque of nuts:
86.8 – 93.9 lb.ft (117.7 – 125.5 N.m, 12.0 – 13.0 kgf.m)



Drive Plate Bolt (A/T)



Flywheel Bolt (M/T)

Torque Converter

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



Not Fully Inserted



Fully Inserted

5. Reinstall the assembled engine and transmission/transaxle into the vehicle.

   Be sure to:

   - Fill crankcase with 5W-30 oil (~5.8 quarts).
   - Fill and bleed the cooling system with 50/50 coolant or mixture appropriate for area.
   - Pressurize the fuel system before starting the vehicle.
   - Reset engine adaptive values and perform steering angle sensor calibration.

   Refer to TSB ENG190 for information regarding engine replacement practices.

6. Verify proper operation of the vehicle with road test, and **erase any stored DTCs** (e.g., EPS, ESC, and TPMS) that may have been set by this procedure. Verify no leaks exist and ensure engine oil and coolant are at their proper level.

   If any DTCs are still active, follow any related diagnosis and repair as needed.

SUBJECT: ENGINE REPLACEMENT INSTRUCTIONS FOR DTC P1326 (PI1803W/X)

AFFECTED VEHICLE RANGE:

Model	Production Date Range
11-13MY Optima (QF/TF)	August 12, 2010 through September 27, 2013
14MY Optima (QF)	August 28, 2013 through May 15, 2014
12-14MY Sorento (XMa)	April 19, 2011 through February 10, 2014
11-13MY Sportage (SL)	December 30, 2010 through August 30, 2013

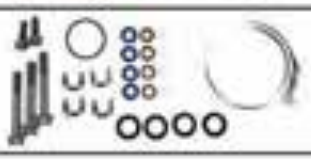
REQUIRED TOOL:

Tool Name	Tool Part No.	Figure	Comments
Torque Wrench Socket	09314 3Q100		Refer to TSB ENG083 for detailed usage instructions
Injector Combustion Seal Ring Installer	09353 2B000		
Pin Tool	91400 00000QQK		Previously auto-shipped to Dealers for PI1802W/X

REQUIRED PARTS:

Part Name	MY	Model	Part Number		Figure
			2.4GDI	2.0T-GDI	
Engine Long Block	2011-2013	QF	21101 2GK05QQK* 21101 2GK14QQK*, or 21101 2GK05QQKR*	21101 2GK07QQK** 21101 2GK15QQK**, or 21101 2GK07QQKR**	
		TF			
		SL	-	21101 2GK07QQKR	
	2012-2013	XMa	21101 2GK09QQK or 21101 2GK09QQKR	-	
	2014	QF	21101 2GK06QQK or 21101 2GK06QQKR	21101 2GK08QQK or 21101 2GK08QQKR	
		XMa ULEV***	21101 2GK10QQK, 21101 2GK11QQK, or 21101 2GK11QQKR	-	
		XMA SULEV***	21101 2GK11QQK or 21101 2GK11QQKR	-	

*2.4GDI engines for 2011-2013 QF and TF are compatible and interchangable.
**2.0T-GDI engines for 2011-2013 QF and TF are compatible and interchangable.
***See page 11 for details about underhood label check.

Part Name	Engine	Part Number	Figure
Service Kit I	2.4GDI	21111 2GK50QQK	
	2.0T-GDI	21111 2GK60QQK	
Service Kit II	2.4GDI and 2.0T-GDI	21111 2GK70QQK	

SUBJECT: ENGINE REPLACEMENT INSTRUCTIONS FOR DTC P1326 (PI1803W/X)

Part Name	Engine	Part Number	Figure
Drive Plate Bolts	2.4GDI and 2.0T-GDI	23311 25050	
		23231 25200 (MT)	
Oil Cooler Tube Assembly (replacement is conditional, refer to page 12)	2.4GDI	25470 2G050QQK	
	2.0T-GDI	25470 2G650QQK	
KS Extension Harness	2.4GDI and 2.0T-GDI	91400 2T000QQK	

WARRANTY INFORMATION (PI1803**W1**, MIL ON WITH P1326):

N Code: N99 C Code: C99

Model	Claim Type	Causal P/N	Qty.	Repair Description	Labor Op Code	Op Time	Replacement P/N	Qty.
Opt. (QF)	R	23060 2G400	0	(PI1803W1) 2.4L GDI MIL ON with P1326, KSDS Wire Harness Inspection Pass, & Engine Replacement	180A23R0	8.4 M/H	21111 2GK50QQK	1
							21111 2GK70QQK	1
							(AT) 23311 25050	7
							(MT) 23231 25200	
							(11-13MY) 21101 2GK05QQKR	1
							(14MY) 21101 2GK06QQKR	
				(PI1803W1) 2.4L GDI MIL ON with P1326, KSDS Wire Harness Inspection Fail, KSDS Extension Harness Install	180A23R1	0.8 M/H	91400 2T000QQK	1
				(PI1803W1) 2.0L T-GDI MIL ON with P1326, KSDS Wire Harness Inspection Pass, & Engine Replacement	180A23R2	8.6 M/H	21111 2GK60QQK	1
							21111 2GK70QQK	1
							(AT) 23311 25050	7
							(MT) 23231 25200	
							(11-13MY) 21101 2GK07QQKR	1
							(14MY) 21101 2GK08QQKR	
				(PI1803W1) 2.0L T-GDI MIL ON with P1326, KSDS Wire Harness Inspection Fail, KSDS Extension Harness Install	180A23R3	0.8 M/H	91400 2T000QQK	1

SUBJECT: ENGINE REPLACEMENT INSTRUCTIONS FOR DTC P1326 (PI1803W/X)

Model	Claim Type	Causal P/N	Qty.	Repair Description	Labor Op Code	Op Time	Replacement P/N	Qty.
Opt. (TF)	R	23060 2G400	0	(PI1803W1) 2.4L GDI MIL ON with P1326, KSDS Wire Harness Inspection Pass, & Engine Replacement	180142R0	8.4 M/H	21111 2GK50QQK	1
							21111 2GK70QQK	1
							(AT) 23311 25050	7
							(MT) 23231 25200	
							21101 2GK05QQKR	1
				(PI1803W1) 2.4L GDI MIL ON with P1326, KSDS Wire Harness Inspection Fail, KSDS Extension Harness Install	180142R5	0.8 M/H	91400 2T000QQK	1
				(PI1803W1) 2.0T-GDI MIL ON with P1326, KSDS Wire Harness Inspection Pass, & Engine Replacement	180142R3	8.4 M/H	21111 2GK50QQK	1
							21111 2GK70QQK	1
							(AT) 23311 25050	7
							(MT) 23231 25200	
							21101 2GK07QQKR	1
				(PI1803W1) 2.0T-GDI MIL ON with P1326, KSDS Wire Harness Inspection Fail, KSDS Extension Harness Install	180142R8	0.8 M/H	91400 2T000QQK	1
Sor. (XMa)	R	21020 2G010	0	(PI1803W1) 2.4L GDI 2WD MIL ON with P1326, KSDS Wire Harness Inspection Pass, & Engine Replacement	180A24R0	8.4 M/H	21111 2GK50QQK	1
							21111 2GK70QQK	1
							(AT) 23311 25050	7
							(MT) 23231 25200	
							(12-13MY) 21101 2GK09QQKR	1
							(14MY ULEV) 21101 2GK11QQKR	
							(14MY ULEV or SULEV) 21101 2GK11QQKR	
				(PI1803W1) 2.4L GDI 2WD MIL ON with P1326, KSDS Wire Harness Inspection Fail, KSDS Extension Harness Install	180A24R1	0.8 M/H	91400 2T000QQK	1
				(PI1803W1) 2.4L GDI AWD MIL ON with P1326, KSDS Wire Harness Inspection Pass, & Engine Replacement	180A24R2	8.6 M/H	21111 2GK50QQK	1
							21111 2GK70QQK	1
							(AT) 23311 25050	7
							(MT) 23231 25200	
							(12-13MY) 21101 2GK09QQKR	1
							(14MY ULEV) 21101 2GK11QQKR	
							(14MY ULEV or SULEV) 21101 2GK11QQKR	
				(PI1803W1) 2.4L GDI AWD MIL ON with P1326, KSDS Wire Harness Inspection Fail, KSDS Extension Harness Install	180A24R3	0.8 M/H	91400 2T000QQK	1

SUBJECT: ENGINE REPLACEMENT INSTRUCTIONS FOR DTC P1326 (PI1803W/X)

Model	Claim Type	Causal P/N	Qty.	Repair Description	Labor Op Code	Op Time	Replacement P/N	Qty.
Spo. (SL)	R	23060 2G400	0	(PI1803**W1**) 2.0L T-GDI 2WD MIL ON with P1326, KSDS Wire Harness Inspection Pass, & Engine Replacement	180143R3	7.7 M/H	21111 2GK60QQK	1
							21111 2GK70QQK	1
							(AT) 23311 25050	7
							(MT) 23231 25200	
							21101 2GK07QQKR	1
				(PI1803**W1**) 2.0L T-GDI 2WD MIL ON with P1326, KSDS Wire Harness Inspection Fail, KSDS Extension Harness Install	180143R8	0.9 M/H	91400 2T000QQK	1
				(PI1803**W1**) 2.0L T-GDI AWD MIL ON with P1326, KSDS Wire Harness Inspection Pass, & Engine Replacement	180143R4	8.1 M/H	21111 2GK60QQK	1
							21111 2GK70QQK	1
							(AT) 23311 25050	7
							(MT) 23231 25200	
							21101 2GK07QQKR	1
				(PI1803**W1**) 2.0L T-GDI AWD MIL ON with P1326, KSDS Wire Harness Inspection Fail, KSDS Extension Harness Install	180143R9	0.9 M/H	91400 2T000QQK	1

SUBJECT: ENGINE REPLACEMENT INSTRUCTIONS FOR DTC P1326 (PI1803W/X)

WARRANTY INFORMATION (PI1803X1, ENGINE SEIZED/SEVERE KNOCKING):

N Code: N99 C Code: C99

Model	Claim Type	Causal P/N	Qty.	Repair Description	Labor Op Code	Op Time	Replacement P/N	Qty.
Opt. (QF)	R	23060 2G400	0	(PI1803X1) 2.4L GDI Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Pass	180A23R4	8.4 M/H	21111 2GK50QGK	1
							21111 2GK70QGK	1
							(AT) 23311 25050	7
							(MT) 23231 25200	
							(11-13MY) 21101 2GK05QGKR	1
							(14MY) 21101 2GK06QGKR	
				(PI1803X1) 2.0L T-GDI Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Pass	180A23R5	8.7 M/H	21111 2GK60QGK	1
							21111 2GK70QGK	1
							(AT) 23311 25050	7
							(MT) 23231 25200	
							(11-13MY) 21101 2GK07QGKR	1
							(14MY) 21101 2GK08QGKR	
				(PI1803X1) 2.4L GDI Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Fail, KSDS Wire Harness Install	180A23R6	8.9 M/H	21111 2GK50QGK	1
							21111 2GK70QGK	1
							(AT) 23311 25050	7
							(MT) 23231 25200	
							(11-13MY) 21101 2GK05QGKR	1
							(14MY) 21101 2GK06QGKR	
							91400 2T000QGK	1
				(PI1803X1) 2.0L T-GDI Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Fail, KSDS Wire Harness Install	180A23R7	9.2 M/H	21111 2GK60QGK	1
							21111 2GK70QGK	1
							(AT) 23311 25050	7
							(MT) 23231 25200	
							(11-13MY) 21101 2GK07QGKR	1
							(14MY) 21101 2GK08QGKR	
							91400 2T000QGK	1
Opt. (TF)	R	23060 2G400	0	(PI1803X1) 2.4L GDI Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Pass	180142RA	8.4 M/H	21111 2GK50QGK	1
							21111 2GK70QGK	1
							(AT) 23311 25050	7
							(MT) 23231 25200	
							21101 2GK05QGKR	1
				(PI1803X1) 2.0T-GDI Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Pass	180142RD	8.7 M/H	21111 2GK60QGK	1
							21111 2GK70QGK	1
							(AT) 23311 25050	7
							(MT) 23231 25200	
							21101 2GK07QGKR	1

SUBJECT: ENGINE REPLACEMENT INSTRUCTIONS FOR DTC P1326 (PI1803W/X)

Model	Claim Type	Causal P/N	Qty.	Repair Description	Labor Op Code	Op Time	Replacement P/N	Qty.
Opt. (TF)	R	23060 2G400	0	(PI1803X1) 2.4L GDI Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Fail, KSDS Wire Harness Install	180142RF	8.9 M/H	21111 2GK50QQK	1
							21111 2GK70QQK	1
							(AT) 23311 25050	7
							(MT) 23231 25200	
							21101 2GK05QQKR	1
							91400 2T000QQK	1
				(PI1803X1) 2.0T-GDI Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Fail, KSDS Wire Harness Install	180142RI	9.2 M/H	21111 2GK60QQK	1
							21111 2GK70QQK	1
							(AT) 23311 25050	7
							(MT) 23231 25200	
							21101 2GK07QQKR	1
							91400 2T000QQK	1
Sor. (XMa)	R	21020 2G010	0	(PI1803X1) 2.4L GDI 2WD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Pass	180A24R4	8.4 M/H	21111 2GK50QQK	1
							21111 2GK70QQK	1
							(AT) 23311 25050	7
							(MT) 23231 25200	
							(12-13MY) 21101 2GK09QQKR	1
							(14MY ULEV) 21101 2GK11QQKR	
							(14MY ULEV or SULEV) 21101 2GK11QQKR	
				(PI1803X1) 2.4L GDI AWD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Pass	180A24R5	8.6 M/H	21111 2GK50QQK	1
							21111 2GK70QQK	1
							(AT) 23311 25050	7
							(MT) 23231 25200	
							(12-13MY) 21101 2GK09QQKR	1
							(14MY ULEV) 21101 2GK11QQKR	
							(14MY ULEV or SULEV) 21101 2GK11QQKR	
				(PI1803X1) 2.4L GDI 2WD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Fail, KSDS Wire Harness Install	180A24R6	8.9 M/H	21111 2GK50QQK	1
							21111 2GK70QQK	1
							(AT) 23311 25050	7
							(MT) 23231 25200	
							(12-13MY) 21101 2GK09QQKR	1
							(14MY ULEV) 21101 2GK11QQKR	
							(14MY ULEV or SULEV) 21101 2GK11QQKR	
							91400 2T000QQK	1
				(PI1803X1) 2.4L GDI AWD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Fail, KSDS Wire Harness Install	180A24R7	9.1 M/H	21111 2GK50QQK	1
							21111 2GK70QQK	1
							(AT) 23311 25050	7
							(MT) 23231 25200	
							(12-13MY) 21101 2GK09QQKR	1
							(14MY ULEV) 21101 2GK11QQKR	
							(14MY ULEV or SULEV) 21101 2GK11QQKR	
							91400 2T000QQK	1

SUBJECT: ENGINE REPLACEMENT INSTRUCTIONS FOR DTC P1326 (PI1803W/X)

Model	Claim Type	Causal P/N	Qty.	Repair Description	Labor Op Code	Op Time	Replacement P/N	Qty.
Spo. (SL)	R	23060 2G400	0	(PI1803X1) 2.0L T-GDI 2WD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Pass	180143RD	7.7 M/H	21111 2GK60QQK	1
							21111 2GK70QQK	1
							(AT) 23311 25050	7
							(MT) 23231 25200	
							21101 2GK07QQKR	1
				(PI1803X1) 2.0L T-GDI AWD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Pass	180143RE	8.1 M/H	21111 2GK60QQK	1
							21111 2GK70QQK	1
							(AT) 23311 25050	7
							(MT) 23231 25200	
							21101 2GK07QQKR	1
				(PI1803X1) 2.0L T-GDI 2WD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Fail, KSDS Wire Harness Install	180143RI	8.3 M/H	21111 2GK60QQK	1
							21111 2GK70QQK	1
							(AT) 23311 25050	7
							(MT) 23231 25200	
							21101 2GK07QQKR	1
							91400 2T000QQK	1
				(PI1803X1) 2.0L T-GDI AWD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Fail, KSDS Wire Harness Install	180143RJ	8.7 M/H	21111 2GK60QQK	1
							21111 2GK70QQK	1
							(AT) 23311 25050	7
							(MT) 23231 25200	
							21101 2GK07QQKR	1
							91400 2T000QQK	1

NOTE: Refer to Warranty Bulletin 2018-14 for details regarding coolant and substitute transportation reimbursement requirements.

Use sublet code 'X3' with a maximum allowed amount of $19.80 for "ENGINE R&R" engine oil reimbursement.

If the replacement of the Oil Cooler Tube Assembly was required, please manually enter the applicable Oil Cooler Tube Assembly part number to the claim's related parts section.

Dispose of old parts in accordance with local, state, and Federal regulations.

*** NOTICE**

VIN inquiry data for this repair is provided for tracking purposes only. Kia retailers should reference PI1803W/X* when accessing the WebDCS system.

Appendix 1 (Warranty Claim Authorization)

Scenario		Description	Action Required
1	Campaign - TSB # PI1803W/X Case for Warranty Authorization **NO INSPECTION**	Wiring Signal Interference Check cannot be completed due to engine seizure or other engine failure (won't run long enough to complete the test)	**TL PWA required for all dealers – Video of condition and WRTY143 form required*** Video requirement examples below are for illustration purposes, individual requirements will vary based upon the condition reported: • Video should be continuous and show the VIN (most convenient VIN plate) and pan to show the engine condition • For engine seizures, attempt to turn over engine with breaker bar in video • For hole in engine block, show hole in video

Appendix 2 (Video Capture & Upload)

Capturing a video is often helpful in assisting the Kia Techline Agent in determining a proper diagnosis strategy. Once a TechLine case is open, the following procedure will guide you through the video capture and upload.

The Chrome™ browser should be used to access the Techline portal. Follow the steps below to clear the default browser if it is other than Chrome™.

For KDS Tab 10.1 Tablets:

1. Select "Settings" from the App Screen.
2. Select the "General" tab at the top.
3. Select "Default Applications".
4. If "Internet" is the default browser, select the CLEAR button.

   If "Chrome" is the default browser, further action is not required.



5. When opening the Techline portal, select "Chrome" and select Always".



For KDS Tab S2 Tablets:

1. Select "Settings" from the App Screen.
2. Select "Applications".
3. Select "Default Applications".



4. Select "Browser app".



5. Ensure "Chrome" is selected.



Setting Your Video Size to "Limit to Email"

1. Select "Camera" from the App Screen.



2. Select the Settings icon.



3. Select the Video Camera icon.



4. Ensure "Limit to email" is selected.



Attaching Video to a Techline Case

1. Open K-Support in the device Chrome™ browser or select the "Techline" button on KDS home page.

   https://ksupport.kiausa.com



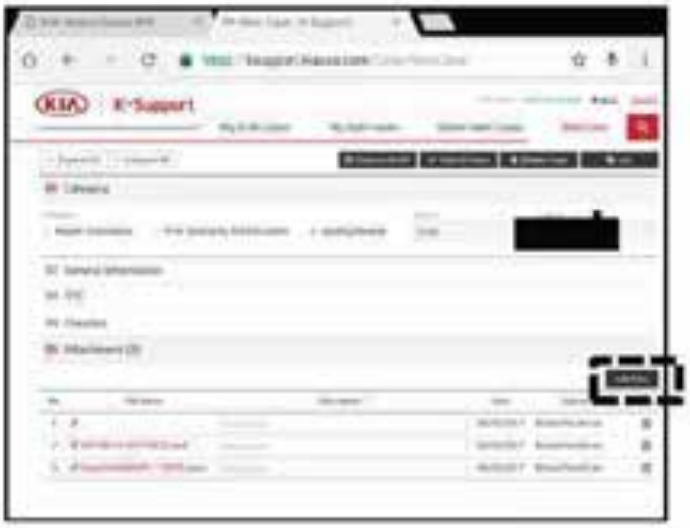
2. Open your existing Techline case for the vehicle requiring a video capture by selecting the case number.



3. Select "Attachment".



4. Select "Add Files".



5. Select "Camcorder" and the video camera will open.



6. Start by recording the VIN. Ensure sun glare is not reflecting off windows or other objects.

   Without stopping the recording, capture the area of the vehicle displaying the issue. i.e.;

   - Engine Noise – record the engine.
   - Hole In Block – record the side of the engine with the damage.
   - Seized Engine – record a technician trying to turn the engine over with a breaker bar.



*** NOTICE**

NOTE: Ensure the video size is set to "Limit to email" (see page 24). <u>Only record the VIN and the engine exhibiting the concern.</u> Any additional information will increase the size of the video and make it difficult to upload or download.

7. Stop the video when you captured what is needed. Select "OK" to use this capture or "RETRY" to capture the video again.

8. Ensure a description of the recording. For example, engine knock or smoke from exhaust.

9. Select "Submit Case".



10. Select "Yes" when the confirmation message below appears.

    Note: Selecting anything other than "Yes" will not save the video capture.



PE19-004

KIA

TAB 74_ PI180 WX_TSB_R1

	GROUP	MODEL
KIA	**Product Improvement**	**2011-2014MY Optima (QF/TF)** **2012-2014MY Sorento (XMa)** **2011-2013MY Sportage (SL)**
	NUMBER	DATE
	PI1803W/X (Rev 1, 02/01/2019)	**November 2018**

PRODUCT IMPROVEMENT CAMPAIGN

SUBJECT: ENGINE REPLACEMENT INSTRUCTIONS FOR DTC P1326 (PI1803W/X)

★ NOTICE

This bulletin has been revised to include additional information. New/revised sections of this bulletin are indicated by a black bar in the margin area.

This bulletin provides information related to the Technical Service Bulletin previously published in November 2018 (PI1803, Rev 1, 01/02/2018) titled "Knock Sensor Detection System - ECU Logic Improvement". Specifically, this bulletin provides instructions on which procedures to follow if, after installation of the KSDS, any one of the subject vehicles below returns to the dealer with Diagnostic Trouble Code ("DTC"), P1326.

Year	Model	Engine	Production Date
2011-2013	Optima (TF)	2.4L GDI	8/12/10 – 9/27/13
2014	Optima (QF)	2.4L & 2.0L T-GDI	8/28/13 – 5/15/14
2011-2013	Sportage (SL)	2.0L T-GDI	12/30/10 – 8/30/13
2012-2014	Sorento (XMa/UMa)	2.4L GDI	4/19/11 – 2/10/14

If DTC P1326 is present, first check for any wiring signal interference following the procedure set forth below before determining whether an engine replacement is necessary. Based on the results of the Wiring Signal Interference Check, dealers are to perform either the Knock Sensor Wiring Repair or the Engine Long-Block Replacement according to the procedures in this TSB.

If the vehicle's engine is already seized or severely knocking, dealers are to perform the Engine Long-Block Replacement **and** the Wiring Signal Interference Check according to the procedures in this TSB.

A Vehicle Diagnosis Number (VDN) must be created with DTC P1326, prior to performing PI1803W/X. If a VDN is not created, Warranty claim submission issues may occur.

Before conducting the procedure, verify the vehicle is included in the list of affected VINs.

★ NOTICE

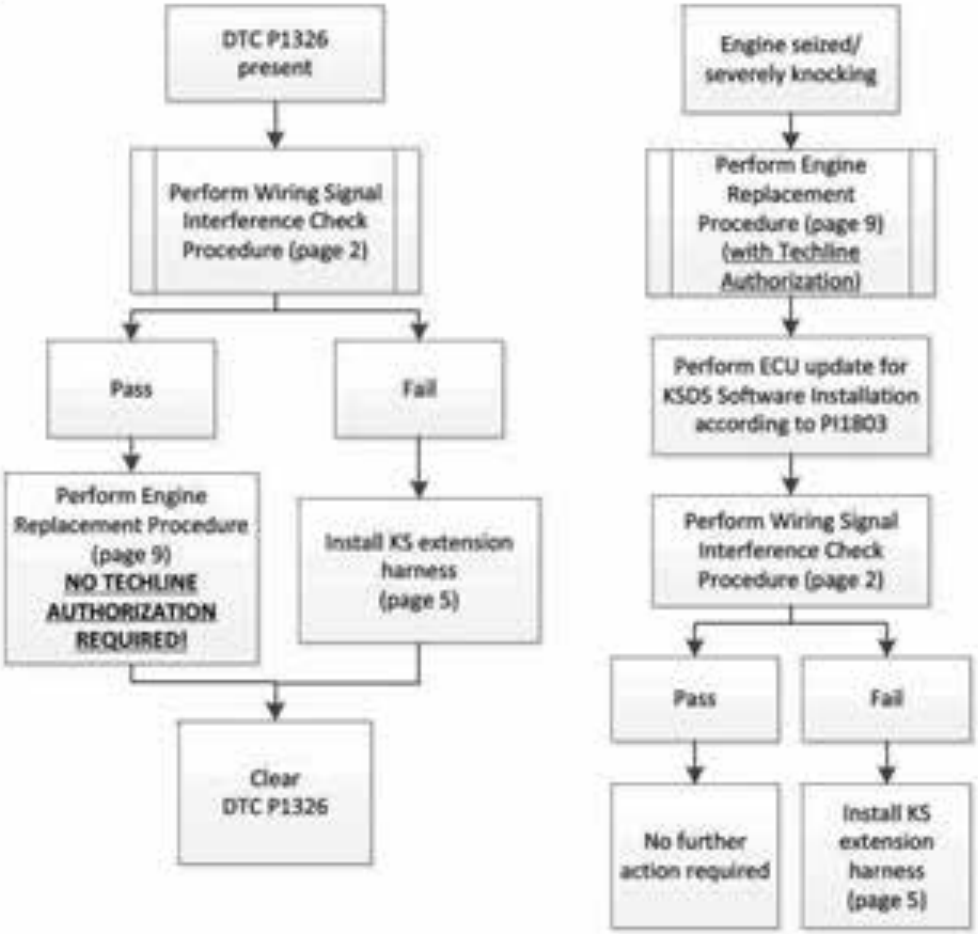
To ensure complete customer satisfaction, always remember to refer to WebDCS Warranty Coverage (validation) Inquiry Screen (Service → Warranty Coverage → Warranty Coverage Inquiry) for a list of any additional campaigns that may need to be performed on the vehicle before returning it to the customer.

File Under: <Product Improvement>

Circulate To: ☒ General Manager ☒ Service Manager ☒ Parts Manager ☒ Service Advisors ☒ Technicians ☒ Body Shop Manager ☐ Fleet Repair

SUBJECT: ENGINE REPLACEMENT INSTRUCTIONS FOR DTC P1326 (PI1803W/X)

Flow Chart:



Wiring Signal Interference Check Procedure:

1. Using the KDS **(connected to the Internet)**, perform a Fault Code Search and confirm DTC P1326 is present.
   - If P1326 is present, proceed to the next step to perform the wiring signal interference check.
   - If the engine is seized or severely knocking, proceed to the engine replacement procedure on page 9.



2. Start/warm up the engine and ensure **ENGINE OIL** is at operating temperature (176°F).



3. From the KDS Home Screen, select S/W Management.



4. Select Engine Control → Wiring Signal Interference Check.



5. Ensure the engine is on and at idle and **ENGINE OIL** temperature is at 176°F degrees or higher. Select OK to proceed.



5b. Select OK to proceed.

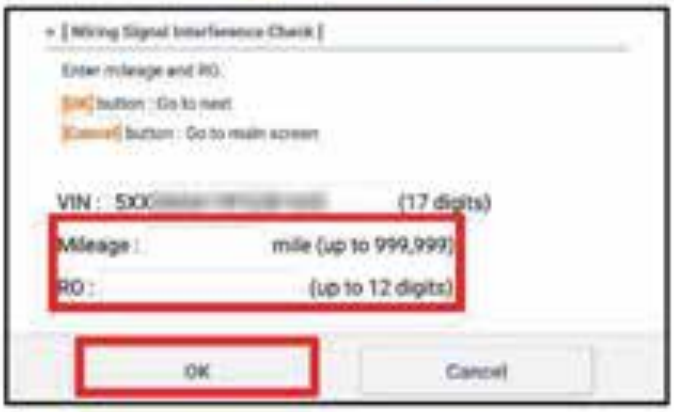
NOTE: This test should only be performed if Knock Sensor Detection System - ECU Logic Improvement (PI1803) has previously been completed.



5c. If the conditions are not met, a pop-up as shown will be displayed.



6. Enter vehicle mileage and RO number (VIN is automatically populated).



7. Wiring Signal Interference Check test will begin and take about three (3) minutes to complete. **NOTE**: Do not push on the accelerator pedal.



- If the result is "OK", turn the engine off and proceed to the Engine Replacement procedure on page 9.



- If the result is "NOT OK", turn the engine off and proceed to **step 2** of the Knock Sensor (KS) Extension Harness Installation procedure on page 5.



KS Extension Harness Installation Procedure:

NOTE: Photos below are from a 15MY Optima (QF). Components and their location may vary in different models.

1. Inspect the ECU harness (A) and verify if the Knock Sensor wiring extension harness (B) has previously been installed.

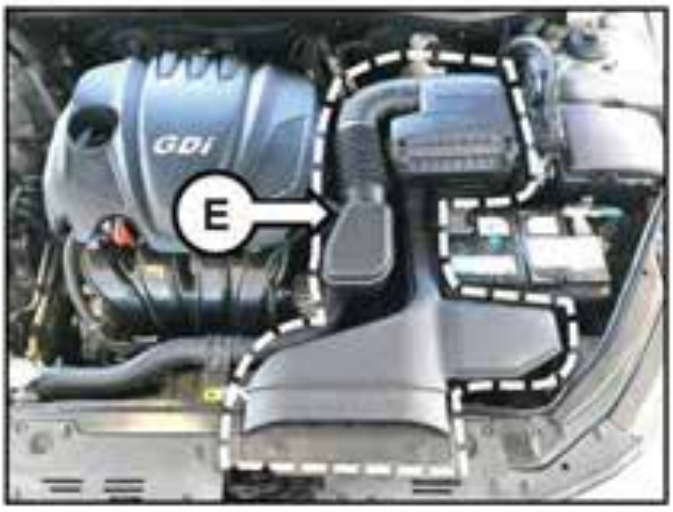
   NOTE: To identify the extension harness (B), look for an external harness (B) which should be cable-tied to the existing wiring harness (A) leading by the intake manifold (C) to the knock sensor (D), as shown.

   - If the extension harness (B) has been installed, open a Techline case online.
   - If the extension harness (B) has not been installed, proceed to the next step.

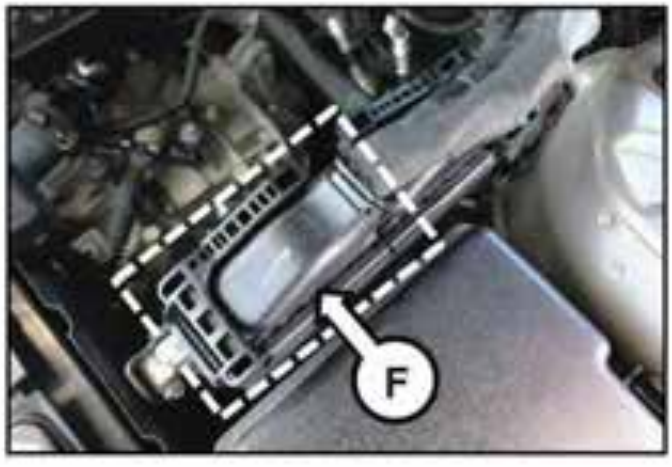




2. Remove the air cleaner and duct assembly (E).



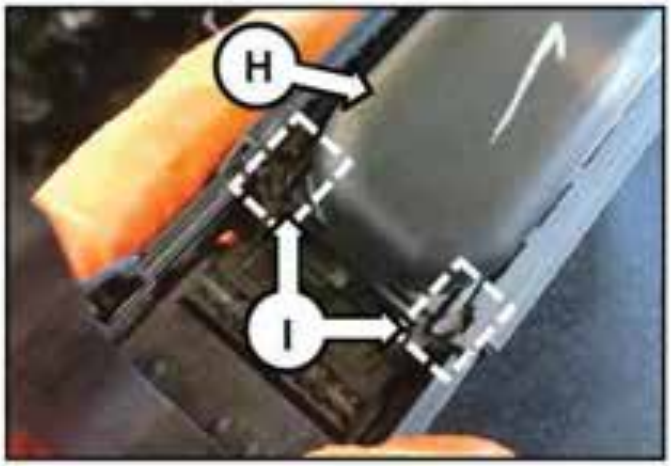
3. Disconnect the ECU connector (F).



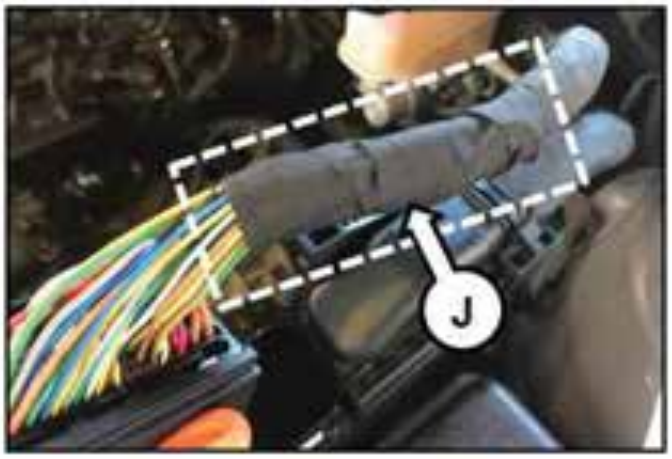
4. Cut the existing cable-tie (G) from the connector.



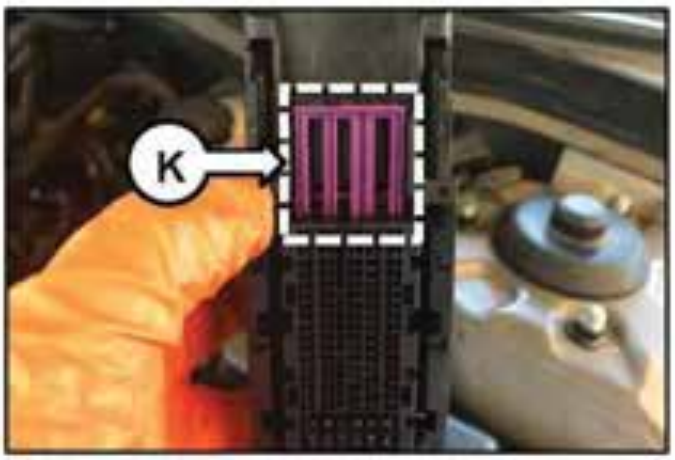
5. Remove the ECU connector cover (H) by carefully unclipping the two (2) tabs (I) and sliding the cover (H) towards the tabs (I).



6. Carefully remove the electrical tape (J) to expose the harness wires.



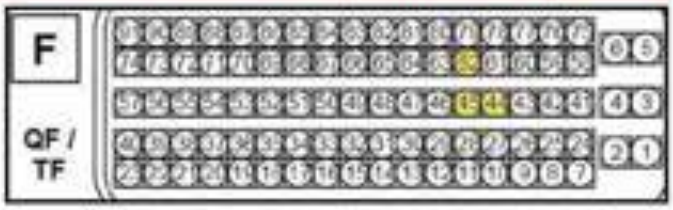
7. Remove the pin retainer (K).



8. Locate the three (3) knock sensor circuit terminals from the ECU connector (F). Refer to the "Schematic Diagrams → Engine Electrical System → Engine Control System → Schematic Diagrams" chapter of the applicable ETM on KGIS.

44. Knock Sensor Shielded Ground
45. Knock Sensor Ground
62. Knock Sensor Interface (Signal)

Click here to see a video of terminal removal.





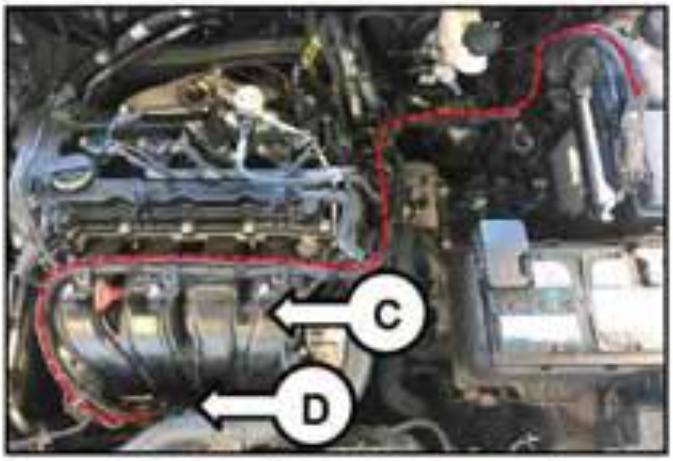
9. Remove the three (3) terminals **one at a time** and insert the new terminals of the extension harness into the ECU connector (F). Reinstall pin retainer (K) and reassemble the connector (F).

Pin	Extension Wire Color
44	Blue
45	Black
62	Red

NOTE: Be sure to note the rotational position of the terminals during removal. They are directional and need to be reinstalled in the same "clock" position.



10. Route the extension harness (B) along the existing harness (A) leading by the intake manifold (C) to the knock sensor (D), as shown.



*** IMPORTANT**

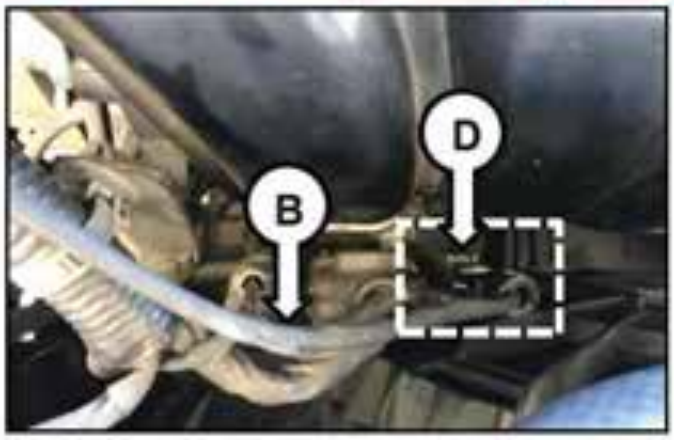
The harness (B) must be routed above and secured to the harness protector (L1) and UNDER the Breather Hose (L2) and Camshaft Position Sensor (L3).





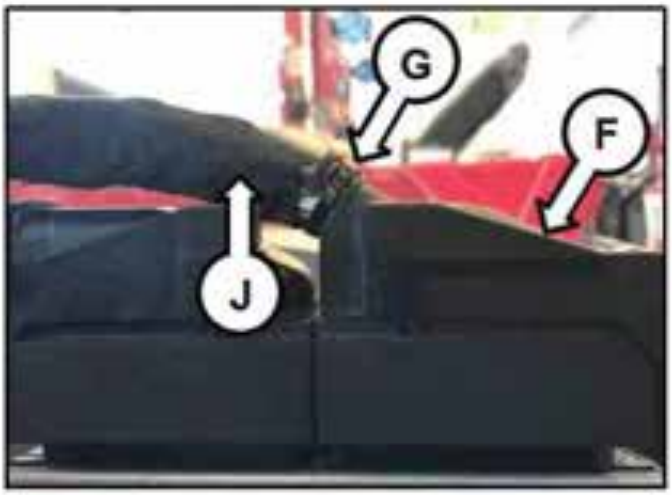


11. Connect the extension harness (B) to the knock sensor (D).

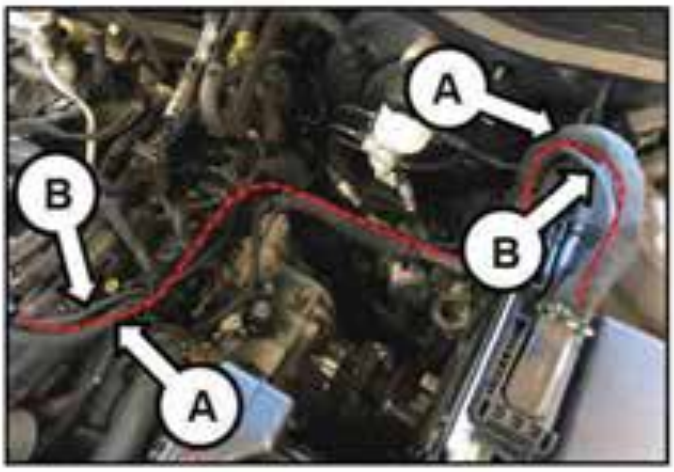


12. Cut off and discard the three (3) old knock sensor circuit terminals and the old knock sensor connector and secure the remaining wires to the new extension harness using the supplied electrical tape. **NOTE**: Complete removal of the old knock sensor wires is not necessary. Only remove the old terminals and connector.

13. Secure the extension harness at the connector (F) by replacing the cable-tie (G) removed in step 4 with a new supplied cable-tie and the electrical tape (J) removed in step 6 with new supplied electrical tape.



14. Secure the extension harness (B) to the existing harness (A) using the supplied cable-ties. Tuck and secure any excess wiring of the extension harness near the ECU with cable-tie.



15. Reinstall all removed components in the reverse order of removal.

16. Erase the P1326 DTC with the KDS and start the engine to confirm proper operation.

Engine Replacement Procedure:

1. Remove the engine assembly by referring to the "Engine And Transmission (Transaxle) Assembly → Engine And Transmission (Transaxle) Assembly → Repair procedures" chapter in the applicable Shop Manual on KGIS.

   Refer to TSB ENG190 for information regarding engine replacement practices.



2. After removal of the engine from the vehicle, remove all components that will need to be transferred by referring to the applicable Shop Manual on KGIS.

3. Place the new engine block on an engine stand.

4. Install all removed components from the old engine block onto the new engine block utilizing all parts from Service Kit I and II. Be advised of notes below.

Notes:

High Pressure Pump & Roller Tappet:

- Refer to TSB ENG083 for special attention and handling procedures of GDI-specific components.
- When installing the high pressure pump and roller tappet onto the new engine, apply engine oil to the roller tappet, and O-rings of the high pressure pump.

Tightening torques of pump bolts:
9.4 – 10.9 lb.ft (12.8 – 14.7 N.m, 1.3 – 1.5 kgf.m)

Tightening torques of pipe flare nut:
19.5 – 23.9 lb.ft (26.5 – 32.4 N.m, 2.7 – 3.3 kgf.m)

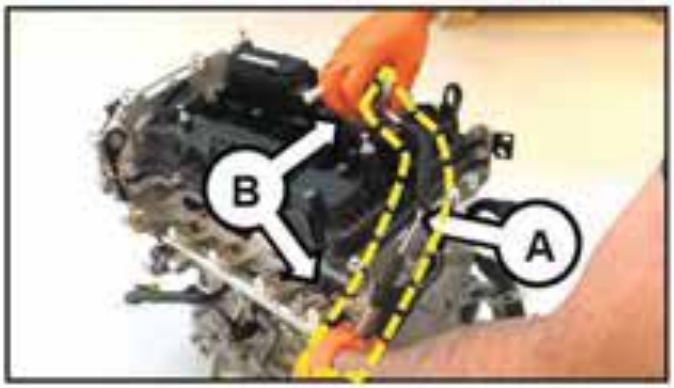


*** NOTICE**

Refer to TSB ENG083 for gasoline direct injection (GDI) specific information, including related warnings and cautions for handling high fuel pressure system components.

High Pressure Fuel Pipe:

1. Properly position the new fuel pipe (A) and then hand-tighten both flare nuts (B).



2. Install the pipe retaining bracket and bolt (C) and torque to specifications.

★ NOTICE

If the bracket and bolt are missing, order and install a new bracket and bolt.

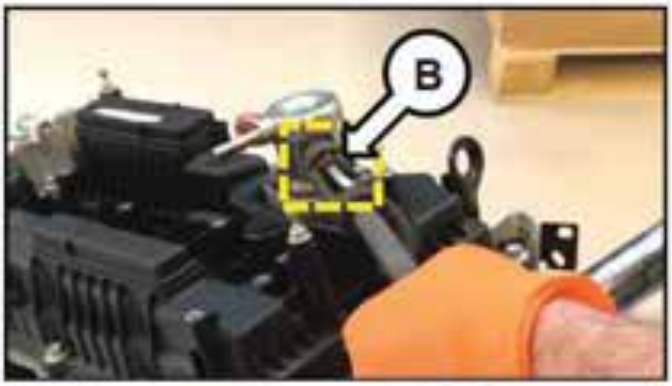
Tightening torque (bracket bolt):
5.8 – 8.7 lb.ft (7.8 –11.8 N.m, 0.8 – 1.2 kgf.m)

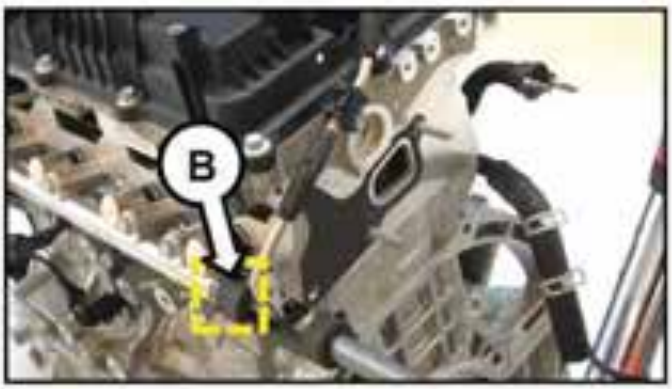


3. Using a click-type/electronic torque wrench and SST 09314-3Q100, torque both flare nuts (B) to specifications.

Tightening torque (flare nuts):
19.5 – 23.9 lb.ft (26.5 – 32.4 N.m, 2.7 – 3.3 kgf.m)

Click here to see a video tutorial of high pressure fuel pipe install (includes high pressure pump install).





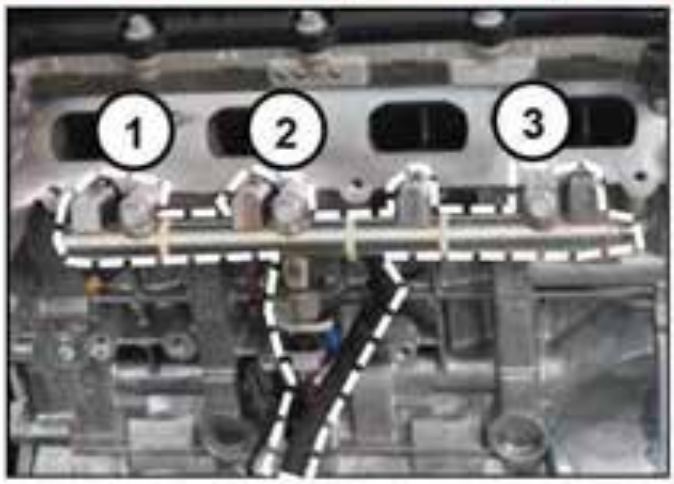
★ IMPORTANT

The high pressure fuel pipe bracket and bolt must be installed and properly torqued prior to torqueing the high pressure fuel pipe flare nuts.

SUBJECT: ENGINE REPLACEMENT INSTRUCTIONS FOR DTC P1326 (PI1803W/X)

Delivery Pipe:

- Refer to TSB ENG083 for special attention and handling procedures of GDI-specific components.
- Prior to installing the delivery pipe, be sure to replace all of the injector O-rings and injector retainers.
- Prior to installing the delivery pipe, apply engine oil to the injector O-rings.
- When installing the delivery pipe, use caution not to damage the tip of the injector.
- Be sure to replace the delivery pipe retaining bolts and torque them in the sequence shown.



Tightening torque of bolts:
13.7 – 17.4 lb.ft (18.6 – 23.5 N.m, 1.9 – 2.4 kgf.m)

*** NOTICE**

Combustion seals must be compressed after installation and before attempting to install into the cylinder head. Use SST 09353 2B000 (refer to TSB ENG083).

Dipstick Tube & Dipstick:

- Prior to installing the new tube, lubricate the o-ring located at the bottom of the tube with engine oil.
- Install the red dipstick included in Service Kit I.

Tightening torque of bolt:
5.8 – 8.7 lb.ft (7.8 – 11.8 N.m, 0.8 - 1.2 kgf.m)



Intake Manifold:

- Prior to installation, replace the intake manifold gaskets.
- Torque bolts in the sequence shown.

Tightening torque of bolts:
13.7 – 17.4 lb.ft (18.6 – 23.5 N.m, 1.9 – 2.4 kgf.m)

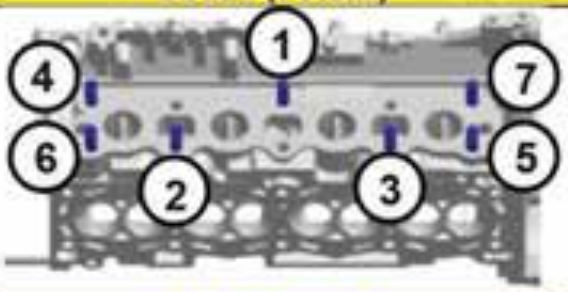


Exhaust Manifold:

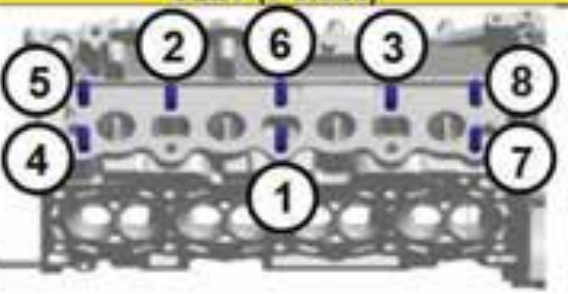
- All engines supplied under this Product Improvement Campaign have the exhaust manifold studs configured for SULEV engines.
- Using the pictures to the right, check the exhaust manifold stud location and quantity. Relocate as required for ULEV engines and obtain one (1) extra from the removed engine.
- Prior to installation, replace the exhaust manifold gasket and front muffler gasket.
- Torque nuts in the sequence shown.

Tightening torque of nuts:
36.2 – 39.7 lb.ft (49.0 – 53.9 N.m, 5.0 – 5.5 kgf.m)

SULEV (7 studs)



ULEV (8 studs)



***For 14MY Sorento (XMa) vehicles <u>only</u>: check the underhood emissions label and record whether the label references ULEV or SULEV. This information is needed to select/order the correct replacement engine.**

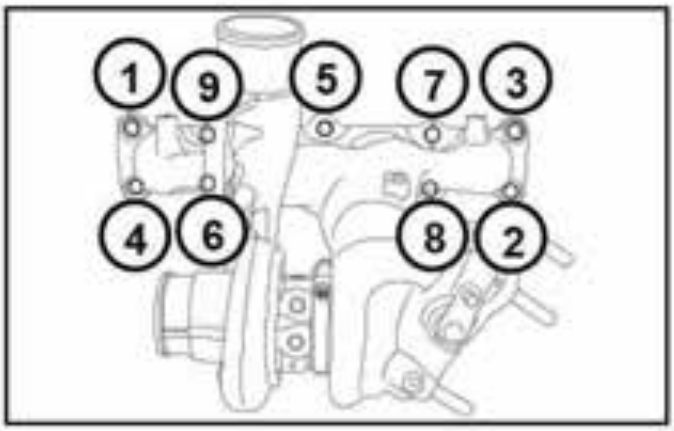

KIA MOTORS CORPORATION
VEHICLE EMISSION CONTROL INFORMATION

Conforms to regulations :	2014 MY			
U.S.EPA : T2B5 LDV	OBD : CA II	Fuel : Gasoline		
California : ULEV PC	OBD : CA II	Fuel : Gasoline		
Engine : LKMXV02.44PE	DFSHD25Z2WS-TWC/TWC			
Evap. : FKMXR0150DRE	No adjustments needed.			A402
[WARNING]	33417-2G4E3			

Loaded (W loading of permanent four-wheel drive or traction control-equipped vehicles must be conducted on a four-wheel drive speed synchronized dynamometer. Otherwise, a non-loaded test procedure must be performed.

- <u>On Turbo engines</u>, replace the turbocharger oil feed line and gaskets.

Tightening torque of oil feed line bolt:
8.7 – 13.0 lb.ft (11.8 – 17.7 N.m, 1.2 – 1.8 kgf.m)
Tightening torque of oil feed line nuts:
5.8 – 8.7 lb.ft (7.8 – 11.8 N.m, 0.8 – 1.2 kgf.m)
Tightening torque of oil drain line nuts and bolts:
5.8 – 8.7 lb.ft (7.8 – 11.8 N.m, 0.8 – 1.2 kgf.m)



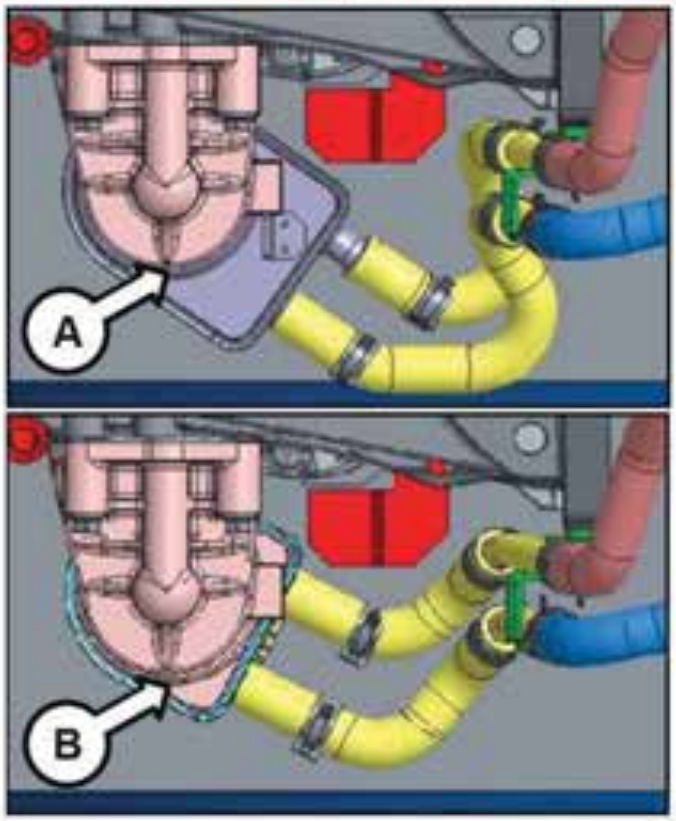
- Torque exhaust manifold nuts in the sequence shown.

Tightening torque of nuts:
36.2 – 39.7 lb.ft (49.0 – 53.9 N.m, 5.0 – 5.5 kgf.m)

Oil Cooler Tube Assembly:

New engines may be supplied with a different oil cooler. Use steps below to determine the need for a replacement oil cooler tube assembly.

- If the new engine's (bigger) oil cooler (A) does not match the old engine's (smaller) oil cooler (B), replace the oil cooler tube assembly with the improved part. See parts table on page 15.
- If the new engine's (bigger) oil cooler (A) matches the old engine's (bigger) oil cooler (A), reuse the old engine's oil cooler tube assembly.
- If the new engine's (smaller) oil cooler (B) matches the old engine's (smaller) oil cooler (B), reuse the old engine's oil cooler tube assembly.



Drive Plate / Flywheel Bolts:

- Replace all seven (7) drive plate (AT) or flywheel (MT) bolts.

Tightening torque of nuts:
86.8 – 93.9 lb.ft (117.7 – 125.5 N.m, 12.0 – 13.0 kgf.m)



Drive Plate Bolt (A/T)



Flywheel Bolt (M/T)

Torque Converter

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



Not Fully Inserted



Fully Inserted

5. Reinstall the assembled engine and transmission/transaxle into the vehicle.

   Be sure to:

   - Fill crankcase with 5W-30 oil (~5.8 quarts).
   - Fill and bleed the cooling system with 50/50 coolant or mixture appropriate for area.
   - Pressurize the fuel system before starting the vehicle.
   - Reset engine adaptive values and perform steering angle sensor calibration.

   Refer to TSB ENG190 for information regarding engine replacement practices.

6. Verify proper operation of the vehicle with road test, and **erase any stored DTCs** (e.g., EPS, ESC, and TPMS) that may have been set by this procedure. Verify no leaks exist and ensure engine oil and coolant are at their proper level.

   If any DTCs are still active, follow any related diagnosis and repair as needed.

SUBJECT: ENGINE REPLACEMENT INSTRUCTIONS FOR DTC P1326 (PI1803W/X)

AFFECTED VEHICLE RANGE:

Model	Production Date Range
11-13MY Optima (QF/TF)	August 12, 2010 through September 27, 2013
14MY Optima (QF)	August 28, 2013 through May 15, 2014
12-14MY Sorento (XMa)	April 19, 2011 through February 10, 2014
11-13MY Sportage (SL)	December 30, 2010 through August 30, 2013

REQUIRED TOOL:

Tool Name	Tool Part No.	Figure	Comments
Torque Wrench Socket	09314 3Q100		Refer to TSB ENG083 for detailed usage instructions
Injector Combustion Seal Ring Installer	09353 2B000		
Pin Tool	91400 00000QQK		Auto-shipped to Dealers in 10/2018. Replacements can be ordered through Mobis Parts America.
Click-Type or Electronic Torque Wrench	N/A		Locally Sourced

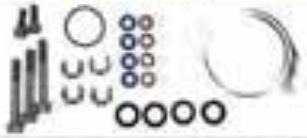
REQUIRED PARTS:

Part Name	MY	Model	Part Number		Figure
			2.4GDI	2.0T-GDI	
Engine Long Block	2011-2013	QF	21101 2GK05QQK* 21101 2GK14QQK*, or 21101 2GK05QQKR*	21101 2GK07QQK** 21101 2GK15QQK**, or 21101 2GK07QQKR**	
		TF			
		SL	-	21101 2GK07QQKR	
	2012-2013	XMa	21101 2GK09QQK or 21101 2GK09QQKR	-	
	2014	QF	21101 2GK06QQK or 21101 2GK06QQKR	21101 2GK08QQK or 21101 2GK08QQKR	
		XMa ULEV***	21101 2GK10QQK, 21101 2GK11QQK, or 21101 2GK11QQKR	-	
		XMA SULEV***	21101 2GK11QQK or 21101 2GK11QQKR	-	

*2.4GDI engines for 2011-2013 QF and TF are compatible and interchangable.
**2.0T-GDI engines for 2011-2013 QF and TF are compatible and interchangable.
***See page 12 for details about underhood label check.

Part Name	Engine	Part Number	Figure
Service Kit I	2.4GDI	21111 2GK50QQK	
	2.0T-GDI	21111 2GK60QQK	

SUBJECT: ENGINE REPLACEMENT INSTRUCTIONS FOR DTC P1326 (PI1803W/X)

Part Name	Engine	Part Number	Figure
Service Kit II	2.4GDI and 2.0T-GDI	21111 2GK70QQK	
Drive Plate Bolts	2.4GDI and 2.0T-GDI	23311 25050	
		23231 25200 (MT)	
Oil Cooler Tube Assembly (replacement is conditional, refer to page 13)	2.4GDI	25470 2G050QQK	
	2.0T-GDI	25470 2G650QQK	
KS Extension Harness	2.4GDI and 2.0T-GDI	*91400 2T100QQK	

*NOTE: Old part number 91400 2T000QQK has been superseded by new part number 91400 2T100QQK.

WARRANTY INFORMATION (PI1803**W1**, MIL ON WITH P1326):

N Code: N99 C Code: C99

Model	Claim Type	Causal P/N	Qty.	Repair Description	Labor Op Code	Op Time	Replacement P/N	Qty.
Opt. (QF) 2.4L	R	23060 2G400	0	(PI1803W1) 2.4L GDI MIL ON with P1326, KSDS Wire Harness Inspection Pass, & Engine Replacement	180A23R0	8.4 M/H	21111 2GK50QQK	1
							21111 2GK70QQK	1
							(AT) 23311 25050	7
							(MT) 23231 25200	
							(11-13MY) 21101 2GK05QQKR	1
							(14MY) 21101 2GK06QQKR	
				(PI1803W1) 2.4L GDI MIL ON with P1326, KSDS Wire Harness Inspection Fail, KSDS Extension Harness Install	180A23R1	0.8 M/H	*91400 2T100QQK	1
Opt. (QF) 2.0L T	R	23060 2G400	0	(PI1803W1) 2.0L T-GDI MIL ON with P1326, KSDS Wire Harness Inspection Pass, & Engine Replacement	180A23R2	8.6 M/H	21111 2GK60QQK	1
							21111 2GK70QQK	1
							(AT) 23311 25050	7
							(MT) 23231 25200	
							(11-13MY) 21101 2GK07QQKR	1
							(14MY) 21101 2GK08QQKR	
				(PI1803W1) 2.0L T-GDI MIL ON with P1326, KSDS Wire Harness Inspection Fail, KSDS Extension Harness Install	180A23R3	0.8 M/H	*91400 2T100QQK	1

*NOTE: Old part number 91400 2T000QQK has been superseded by new part number 91400 2T100QQK.

SUBJECT: ENGINE REPLACEMENT INSTRUCTIONS FOR DTC P1326 (PI1803W/X)

Model	Claim Type	Causal P/N	Qty.	Repair Description	Labor Op Code	Op Time	Replacement P/N	Qty.
Opt. (TF) 2.4L	R	23060 2G400	0	(PI1803W1) 2.4L GDI MIL ON with P1326, KSDS Wire Harness Inspection Pass, & Engine Replacement	180142R0	8.4 M/H	21111 2GK50QQK	1
							21111 2GK70QQK	1
							(AT) 23311 25050	7
							(MT) 23231 25200	
							21101 2GK05QQKR	1
				(PI1803W1) 2.4L GDI MIL ON with P1326, KSDS Wire Harness Inspection Fail, KSDS Extension Harness Install	180142R5	0.8 M/H	*91400 2T100QQK	1
Opt. (TF) 2.0L T	R	23060 2G400	0	(PI1803W1) 2.0T-GDI MIL ON with P1326, KSDS Wire Harness Inspection Pass, & Engine Replacement	180142R3	8.4 M/H	21111 2GK50QQK	1
							21111 2GK70QQK	1
							(AT) 23311 25050	7
							(MT) 23231 25200	
							21101 2GK07QQKR	1
				(PI1803W1) 2.0T-GDI MIL ON with P1326, KSDS Wire Harness Inspection Fail, KSDS Extension Harness Install	180142R8	0.8 M/H	*91400 2T100QQK	1
Sor. (XMa) 2.4L	R	21020 2G010	0	(PI1803W1) 2.4L GDI 2WD MIL ON with P1326, KSDS Wire Harness Inspection Pass, & Engine Replacement	180A24R0	8.4 M/H	21111 2GK50QQK	1
							21111 2GK70QQK	1
							(AT) 23311 25050	7
							(MT) 23231 25200	
							(12-13MY) 21101 2GK09QQKR	1
							(14MY ULEV) 21101 2GK11QQKR	
							(14MY ULEV or SULEV) 21101 2GK11QQKR	
				(PI1803W1) 2.4L GDI 2WD MIL ON with P1326, KSDS Wire Harness Inspection Fail, KSDS Extension Harness Install	180A24R1	0.8 M/H	*91400 2T100QQK	1
				(PI1803W1) 2.4L GDI AWD MIL ON with P1326, KSDS Wire Harness Inspection Pass, & Engine Replacement	180A24R2	8.6 M/H	21111 2GK50QQK	1
							21111 2GK70QQK	1
							(AT) 23311 25050	7
							(MT) 23231 25200	
							(12-13MY) 21101 2GK09QQKR	1
							(14MY ULEV) 21101 2GK11QQKR	
							(14MY ULEV or SULEV) 21101 2GK11QQKR	
				(PI1803W1) 2.4L GDI AWD MIL ON with P1326, KSDS Wire Harness Inspection Fail, KSDS Extension Harness Install	180A24R3	0.8 M/H	*91400 2T100QQK	1

*NOTE: Old part number 91400 2T000QQK has been superseded by new part number 91400 2T100QQK.

SUBJECT: ENGINE REPLACEMENT INSTRUCTIONS FOR DTC P1326 (PI1803W/X)

Model	Claim Type	Causal P/N	Qty.	Repair Description	Labor Op Code	Op Time	Replacement P/N	Qty.
Spo. (SL) 2.0L T	R	23060 2G400	0	(PI1803W1) 2.0L T-GDI 2WD MIL ON with P1326, KSDS Wire Harness Inspection Pass, & Engine Replacement	180143R3	7.7 M/H	21111 2GK60QQK	1
							21111 2GK70QQK	1
							(AT) 23311 25050	7
							(MT) 23231 25200	
							21101 2GK07QQKR	1
				(PI1803W1) 2.0L T-GDI 2WD MIL ON with P1326, KSDS Wire Harness Inspection Fail, KSDS Extension Harness Install	180143R8	0.9 M/H	*91400 2T100QQK	1
				(PI1803W1) 2.0L T-GDI AWD MIL ON with P1Pass, & Engine Replacement	180143R4	8.1 M/H	21111 2GK60QQK	1
							21111 2GK70QQK	1
							(AT) 23311 25050	7
							(MT) 23231 25200	
							21101 2GK07QQKR	1
				(PI1803W1) 2.0L T-GDI AWD MIL ON with P1326, KSDS Wire Harness Inspection Fail, KSDS Extension Harness Install	180143R9	0.9 M/H	*91400 2T100QQK	1

*NOTE: Old part number 91400 2T000QQK has been superseded by new part number 91400 2T100QQK.

SUBJECT: ENGINE REPLACEMENT INSTRUCTIONS FOR DTC P1326 (PI1803W/X)

WARRANTY INFORMATION (PI1803X1, ENGINE SEIZED/SEVERE KNOCKING):

N Code: N99 C Code: C99

Model	Claim Type	Causal P/N	Qty.	Repair Description	Labor Op Code	Op Time	Replacement P/N	Qty.
Opt. (QF) 2.4L	R	23060 2G400	0	(PI1803X1) 2.4L GDI Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Pass	180A23R4	8.4 M/H	21111 2GK50QGK	1
							21111 2GK70QGK	1
							(AT) 23311 25050	7
							(MT) 23231 25200	
							(11-13MY) 21101 2GK05QGKR	1
							(14MY) 21101 2GK06QGKR	
				(PI1803X1) 2.4L GDI Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Fail, KSDS Wire Harness Install	180A23R6	8.9 M/H	21111 2GK50QGK	1
							21111 2GK70QGK	1
							(AT) 23311 25050	7
							(MT) 23231 25200	
							(11-13MY) 21101 2GK05QGKR	1
							(14MY) 21101 2GK06QGKR	
							*91400 2T100QGK	1
Opt. (QF) 2.0L T	R	23060 2G400	0	(PI1803X1) 2.0L T-GDI Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Pass	180A23R5	8.7 M/H	21111 2GK60QGK	1
							21111 2GK70QGK	1
							(AT) 23311 25050	7
							(MT) 23231 25200	
							(11-13MY) 21101 2GK07QGKR	1
							(14MY) 21101 2GK08QGKR	
				(PI1803X1) 2.0L T-GDI Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Fail, KSDS Wire Harness Install	180A23R7	9.2 M/H	21111 2GK60QGK	1
							21111 2GK70QGK	1
							(AT) 23311 25050	7
							(MT) 23231 25200	
							(11-13MY) 21101 2GK07QGKR	1
							(14MY) 21101 2GK08QGKR	
							*91400 2T100QGK	1
Opt. (TF) 2.4L	R	23060 2G400	0	(PI1803X1) 2.4L GDI Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Pass	180142RA	8.4 M/H	21111 2GK50QGK	1
							21111 2GK70QGK	1
							(AT) 23311 25050	7
							(MT) 23231 25200	
							21101 2GK05QGKR	1
				(PI1803X1) 2.4L GDI Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Fail, KSDS Wire Harness Install	180142RF	8.9 M/H	21111 2GK50QGK	1
							21111 2GK70QGK	1
							(AT) 23311 25050	7
							(MT) 23231 25200	
							21101 2GK05QGKR	1
							*91400 2T100QGK	1

***NOTE: Old part number 91400 2T000QGK has been superseded by new part number 91400 2T100QGK.**

SUBJECT: ENGINE REPLACEMENT INSTRUCTIONS FOR DTC P1326 (PI1803W/X)

Model	Claim Type	Causal P/N	Qty.	Repair Description	Labor Op Code	Op Time	Replacement P/N	Qty.
Opt. (TF) 2.0L T	R	23060 2G400	0	(PI1803X1) 2.0T-GDI Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Pass	180142RD	8.7 M/H	21111 2GK60QQK	1
							21111 2GK70QQK	1
							(AT) 23311 25050	7
							(MT) 23231 25200	
							21101 2GK07QQKR	1
				(PI1803X1) 2.0T-GDI Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Fail, KSDS Wire Harness Install	180142RI	9.2 M/H	21111 2GK60QQK	1
							21111 2GK70QQK	1
							(AT) 23311 25050	7
							(MT) 23231 25200	
							21101 2GK07QQKR	1
							*91400 2T100QQK	1
Scr. (XMa) 2.4L	R	21020 2G010	0	(PI1803X1) 2.4L GDI 2WD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Pass	180A24R4	8.4 M/H	21111 2GK50QQK	1
							21111 2GK70QQK	1
							(AT) 23311 25050	7
							(MT) 23231 25200	
							(12-13MY) 21101 2GK09QQKR	1
							(14MY ULEV) 21101 2GK11QQKR	
							(14MY ULEV or SULEV) 21101 2GK11QQKR	
				(PI1803X1) 2.4L GDI 2WD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Fail, KSDS Wire Harness Install	180A24R6	8.9 M/H	21111 2GK50QQK	1
							21111 2GK70QQK	1
							(AT) 23311 25050	7
							(MT) 23231 25200	
							(12-13MY) 21101 2GK09QQKR	1
							(14MY ULEV) 21101 2GK11QQKR	
							(14MY ULEV or SULEV) 21101 2GK11QQKR	
							*91400 2T100QQK	1
				(PI1803X1) 2.4L GDI AWD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Pass	180A24R5	8.6 M/H	21111 2GK50QQK	1
							21111 2GK70QQK	1
							(AT) 23311 25050	7
							(MT) 23231 25200	
							(12-13MY) 21101 2GK09QQKR	1
							(14MY ULEV) 21101 2GK11QQKR	
							(14MY ULEV or SULEV) 21101 2GK11QQKR	
				(PI1803X1) 2.4L GDI AWD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Fail, KSDS Wire Harness Install	180A24R7	9.1 M/H	21111 2GK50QQK	1
							21111 2GK70QQK	1
							(AT) 23311 25050	7
							(MT) 23231 25200	
							(12-13MY) 21101 2GK09QQKR	1
							(14MY ULEV) 21101 2GK11QQKR	
							(14MY ULEV or SULEV) 21101 2GK11QQKR	
							*91400 2T100QQK	1

*NOTE: Old part number 91400 2T000QQK has been superseded by new part number 91400 2T100QQK.

SUBJECT: ENGINE REPLACEMENT INSTRUCTIONS FOR DTC P1326 (PI1803W/X)

Model	Claim Type	Causal P/N	Qty.	Repair Description	Labor Op Code	Op Time	Replacement P/N	Qty.
Spo. (SL) 2.0L T	R	23060 2G400	0	(PI1803X1) 2.0L T-GDI 2WD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Pass	180143RD	7.7 M/H	21111 2GK60QQK	1
							21111 2GK70QQK	1
							(AT) 23311 25050	7
							(MT) 23231 25200	
							21101 2GK07QQKR	1
				(PI1803X1) 2.0L T-GDI 2WD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Fail, KSDS Wire Harness Install	180143RI	8.3 M/H	21111 2GK60QQK	1
							21111 2GK70QQK	1
							(AT) 23311 25050	7
							(MT) 23231 25200	
							21101 2GK07QQKR	1
							*91400 2T100QQK	1
				(PI1803X1) 2.0L T-GDI AWD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Pass	180143RE	8.1 M/H	21111 2GK60QQK	1
							21111 2GK70QQK	1
							(AT) 23311 25050	7
							(MT) 23231 25200	
							21101 2GK07QQKR	1
				(PI1803X1) 2.0L T-GDI AWD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Fail, KSDS Wire Harness Install	180143RJ	8.7 M/H	21111 2GK60QQK	1
							21111 2GK70QQK	1
							(AT) 23311 25050	7
							(MT) 23231 25200	
							21101 2GK07QQKR	1
							*91400 2T100QQK	1

NOTE: Refer to Warranty Bulletin 2018-14 for details regarding coolant and substitute transportation reimbursement requirements.

***Old part number 91400 2T000QQK has been superseded by new part number 91400 2T100QQK.**

Use sublet code 'X3' with a maximum allowed amount of $19.80 for "ENGINE R&R" engine oil reimbursement.

If the replacement of the Oil Cooler Tube Assembly was required, please manually enter the applicable Oil Cooler Tube Assembly part number to the claim's related parts section.

Dispose of old parts in accordance with local, state, and Federal regulations.

★ NOTICE

VIN inquiry data for this repair is provided for tracking purposes only. Kia retailers should reference PI1803W/X* when accessing the WebDCS system.

Appendix 1 (Warranty Claim Authorization)

	Scenario	Description	Action Required
1	Campaign - TSB # PI1803W/X Case for Warranty Authorization **NO INSPECTION**	Wiring Signal Interference Check cannot be completed due to engine seizure or other engine failure (won't run long enough to complete the test)	**TL PWA required for all dealers – Video of condition and WRTY143 form required*** Video requirement examples below are for illustration purposes, individual requirements will vary based upon the condition reported: • Video should be continuous and show the VIN (most convenient VIN plate) and pan to show the engine condition • For engine seizures, attempt to turn over engine with breaker bar in video • For hole in engine block, show hole in video

Appendix 2 (Video Capture & Upload)

Capturing a video is often helpful in assisting the Kia Techline Agent in determining a proper diagnosis strategy. Once a TechLine case is open, the following procedure will guide you through the video capture and upload.

The Chrome™ browser should be used to access the Techline portal. Follow the steps below to clear the default browser if it is other than Chrome™.

For KDS Tab 10.1 Tablets:

1. Select "Settings" from the App Screen.
2. Select the "General" tab at the top.
3. Select "Default Applications".
4. If "Internet" is the default browser, select the CLEAR button.

   If "Chrome" is the default browser, further action is not required.



5. When opening the Techline portal, select "Chrome" and select Always".



For KDS Tab S2 Tablets:

1. Select "Settings" from the App Screen.
2. Select "Applications".
3. Select "Default Applications".



4. Select "Browser app".



5. Ensure "Chrome" is selected.



Setting Your Video Size to "Limit to Email"

1. Select "Camera" from the App Screen.



2. Select the Settings icon.



3. Select the Video Camera icon.



4. Ensure "Limit to email" is selected.



Attaching Video to a Techline Case

1. Open K-Support in the device Chrome™ browser or select the "Techline" button on KDS home page.

   https://ksupport.kiausa.com



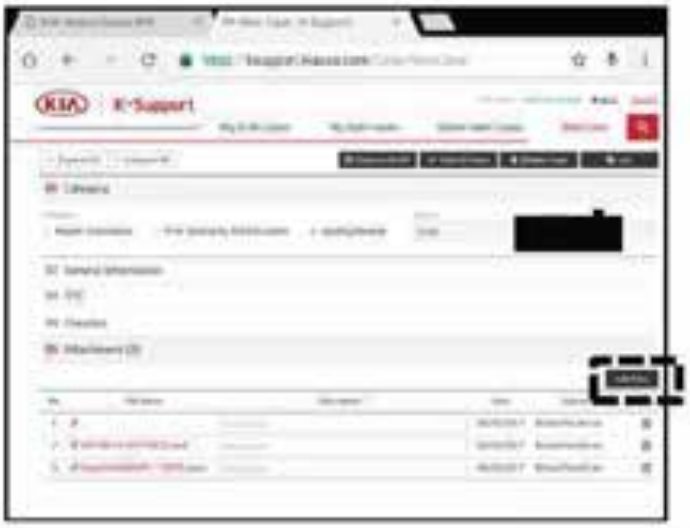
2. Open your existing Techline case for the vehicle requiring a video capture by selecting the case number.



3. Select "Attachment".



4. Select "Add Files".



5. Select "Camcorder" and the video camera will open.



6. Start by recording the VIN. Ensure sun glare is not reflecting off windows or other objects.

   Without stopping the recording, capture the area of the vehicle displaying the issue. i.e.;

   - Engine Noise – record the engine.
   - Hole In Block – record the side of the engine with the damage.
   - Seized Engine – record a technician trying to turn the engine over with a breaker bar.



*** NOTICE**

NOTE: Ensure the video size is set to "Limit to email" (see page 24). <u>Only record the VIN and the engine exhibiting the concern.</u> Any additional information will increase the size of the video and make it difficult to upload or download.

7. Stop the video when you captured what is needed. Select "OK" to use this capture or "RETRY" to capture the video again.

8. Ensure a description of the recording. For example, engine knock or smoke from exhaust.

9. Select "Submit Case".



10. Select "Yes" when the confirmation message below appears.

    Note: Selecting anything other than "Yes" will not save the video capture.



PE19-004

KIA

TAB 75_ PI180 WX_TSB_R2

	GROUP	MODEL
KIA	**Product Improvement**	**2011-2014MY Optima (QF/TF) 2012-2014MY Sorento (XMa) 2011-2013MY Sportage (SL)**
	NUMBER	DATE
	PI1803W/X (Rev 2, 02/11/2019)	**November 2018**

PRODUCT IMPROVEMENT CAMPAIGN

SUBJECT: ENGINE REPLACEMENT INSTRUCTIONS FOR DTC P1326 (PI1803W/X)

★ NOTICE

This bulletin has been revised to include additional information. New/revised sections of this bulletin are indicated by a black bar in the margin area.

This bulletin provides information related to the Technical Service Bulletin previously published in November 2018 (PI1803, Rev 1, 01/02/2018) titled "Knock Sensor Detection System - ECU Logic Improvement". Specifically, this bulletin provides instructions on which procedures to follow if, after installation of the KSDS, any one of the subject vehicles below returns to the dealer with Diagnostic Trouble Code ("DTC"), P1326.

Year	Model	Engine	Production Date
2011-2013	Optima (TF)	2.4L & 2.0L T-GDI	8/12/10 – 9/27/13
2014	Optima (QF)	2.4L & 2.0L T-GDI	8/28/13 – 5/15/14
2011-2013	Sportage (SL)	2.0L T-GDI	12/30/10 – 8/30/13
2012-2014	Sorento (XMa)	2.4L GDI	4/19/11 – 2/10/14

If DTC P1326 is present, first check for any wiring signal interference following the procedure set forth below before determining whether an engine replacement is necessary. Based on the results of the Wiring Signal Interference Check, dealers are to perform either the Knock Sensor Wiring Repair or the Engine Long-Block Replacement according to the procedures in this TSB.

If the vehicle's engine is already seized or severely knocking, dealers are to perform the Engine Long-Block Replacement **and** the Wiring Signal Interference Check according to the procedures in this TSB.

A Vehicle Diagnosis Number (VDN) must be created with DTC P1326, prior to performing PI1803W/X. If a VDN is not created, Warranty claim submission issues may occur.

Before conducting the procedure, verify the vehicle is included in the list of affected VINs.

★ NOTICE

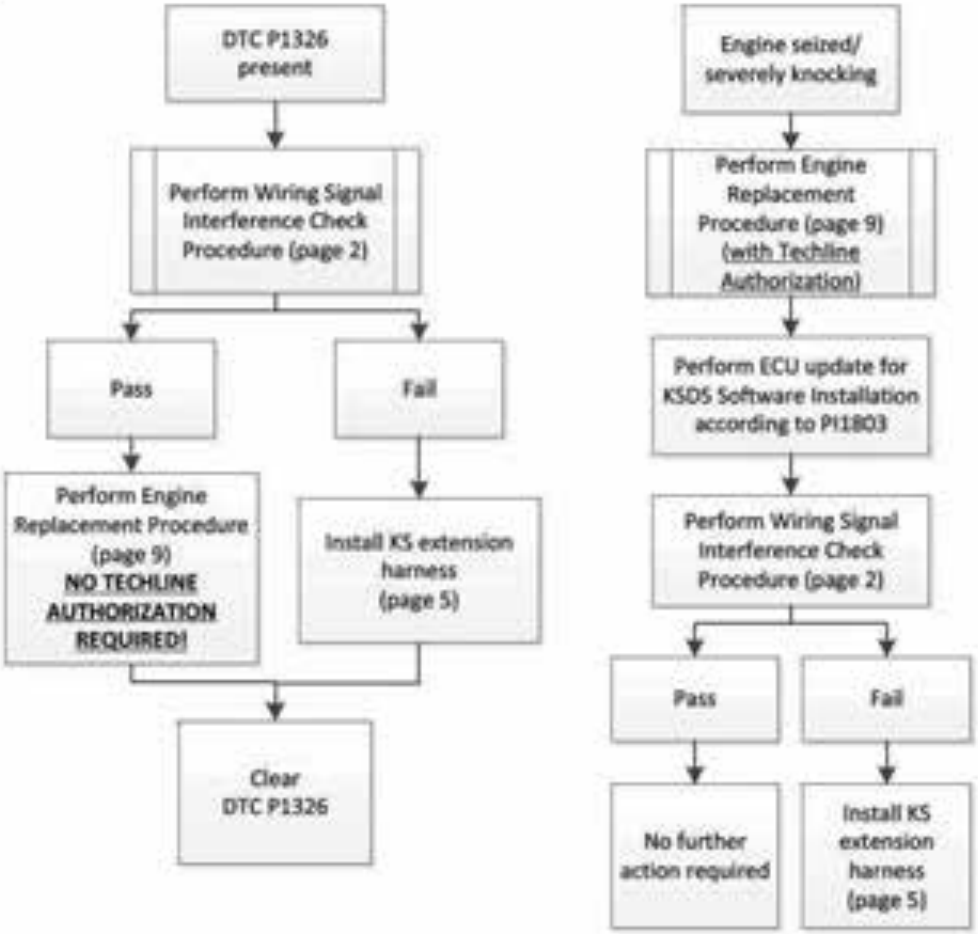
To ensure complete customer satisfaction, always remember to refer to WebDCS Warranty Coverage (validation) Inquiry Screen (Service → Warranty Coverage → Warranty Coverage Inquiry) for a list of any additional campaigns that may need to be performed on the vehicle before returning it to the customer.

File Under: <Product Improvement>

Circulate To: ☒ General Manager ☒ Service Manager ☒ Parts Manager ☒ Service Advisors ☒ Technicians ☒ Body Shop Manager ☐ Fleet Repair

SUBJECT: ENGINE REPLACEMENT INSTRUCTIONS FOR DTC P1326 (PI1803W/X)

Flow Chart:



Wiring Signal Interference Check Procedure:

1. Using the KDS **(connected to the Internet)**, perform a Fault Code Search and confirm DTC P1326 is present.
   - If P1326 is present, proceed to the next step to perform the wiring signal interference check.
   - If the engine is seized or severely knocking, proceed to the engine replacement procedure on page 9.



2. Start/warm up the engine and ensure **ENGINE OIL** is at operating temperature (176°F).



3. From the KDS Home Screen, select S/W Management.



4. Select Engine Control → Wiring Signal Interference Check.



5. Ensure the engine is on and at idle and **ENGINE OIL** temperature is at 176°F degrees or higher. Select OK to proceed.



5b. Select OK to proceed.

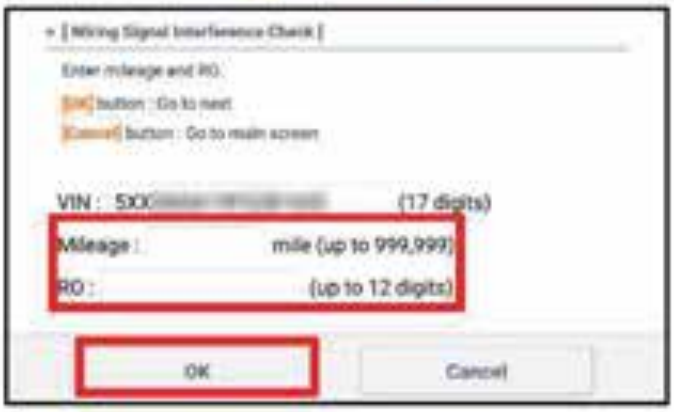
NOTE: This test should only be performed if Knock Sensor Detection System - ECU Logic Improvement (PI1803) has previously been completed.



5c. If the conditions are not met, a pop-up as shown will be displayed.



6. Enter vehicle mileage and RO number (VIN is automatically populated).



7. Wiring Signal Interference Check test will begin and take about three (3) minutes to complete. **NOTE**: Do not push on the accelerator pedal.



- If the result is "OK", turn the engine off and proceed to the Engine Replacement procedure on page 9.



- If the result is "NOT OK", turn the engine off and proceed to **step 2** of the Knock Sensor (KS) Extension Harness Installation procedure on page 5.



SUBJECT: ENGINE REPLACEMENT INSTRUCTIONS FOR DTC P1326 (PI1803W/X)

KS Extension Harness Installation Procedure:

NOTE: Photos below are from a 15MY Optima (QF). Components and their location may vary in different models.

1. Inspect the ECU harness (A) and verify if the Knock Sensor wiring extension harness (B) has previously been installed.

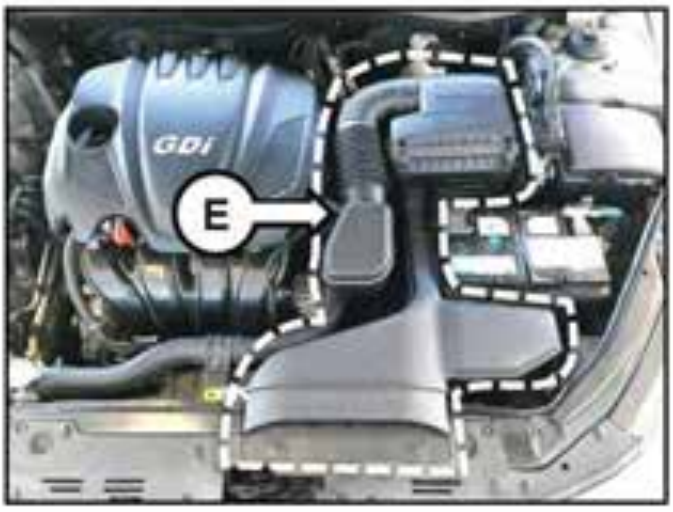
   NOTE: To identify the extension harness (B), look for an external harness (B) which should be cable-tied to the existing wiring harness (A) leading by the intake manifold (C) to the knock sensor (D), as shown.

   - If the extension harness (B) has been installed, open a Techline case online.
   - If the extension harness (B) has not been installed, proceed to the next step.





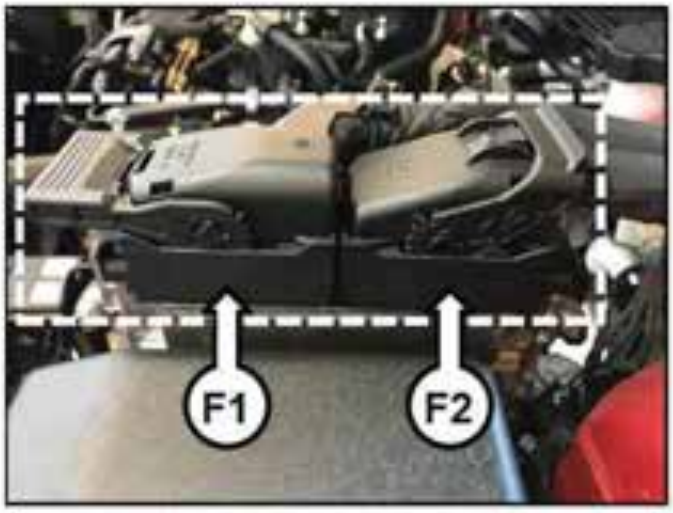
2. Remove the air cleaner and duct assembly (E).



3. Disconnect the ECU connector* (figure F1 **or** F2) (*see IMPORTANT note below).

*** IMPORTANT**

Location of the ECU connector may vary from model to model. Refer to the table on page 6 for the ECU connector number and the applicable ETM Manual on KGIS for the location of the ECU connector.

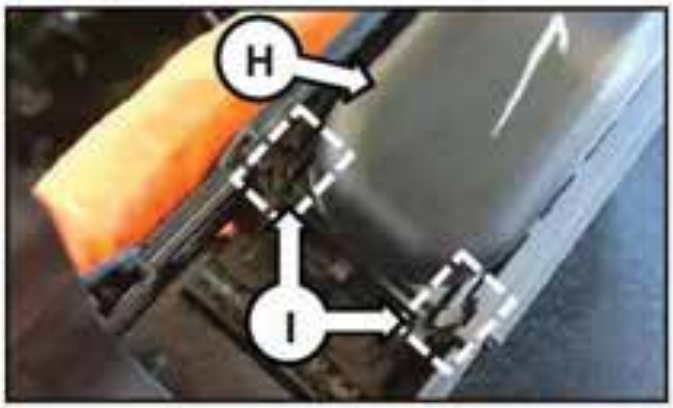


MY	Model	Engine	ECU Connector Number
2011-2013	TF	2.4	CHG-BG
		2.0T	CHTG-BG
2014	QF	2.4	C200-B
		2.0T	C100-B
2011-2013	SL	2.0T	CHTG-BG
2012-2013	XMa	2.4	CHGG-B
2014			C300-B

4. Cut the existing cable-tie (G) from the connector.



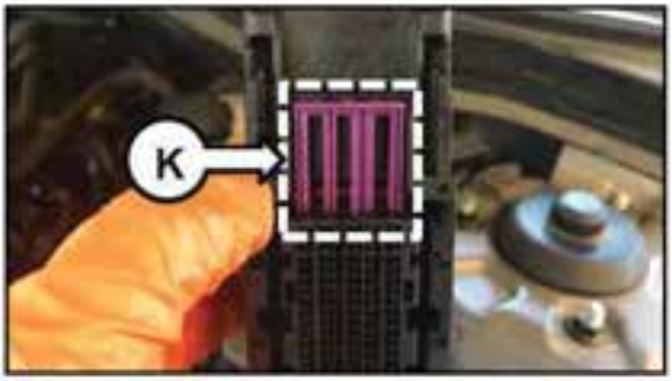
5. Remove the ECU connector cover (H) by carefully unclipping the two (2) tabs (I) and sliding the cover (H) towards the tabs (I).



6. Carefully remove the electrical tape (J) to expose the harness wires.



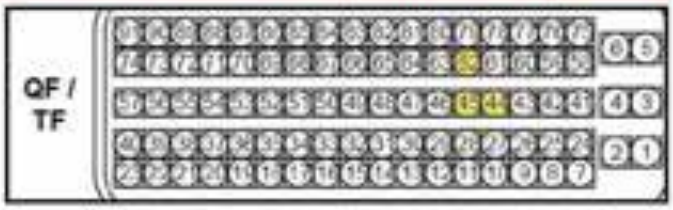
7. Remove the pin retainer (K).



8. Locate the three (3) knock sensor circuit terminals from the ECU connector. Refer to the "Schematic Diagrams → Engine Electrical System → Engine Control System → Schematic Diagrams" chapter of the applicable ETM on KGIS.

   44. Knock Sensor Shielded Ground
   45. Knock Sensor Ground
   62. Knock Sensor Interface (Signal)

   Click here to see a video of terminal removal.





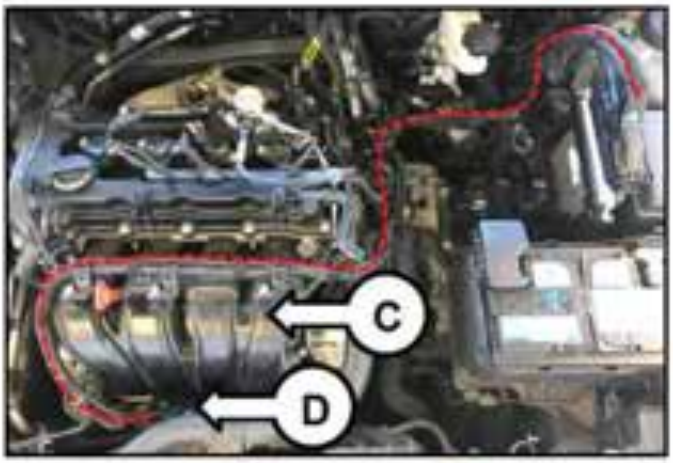
9. Remove the three (3) terminals **one at a time** and insert the new terminals of the extension harness into the ECU connector (F). Reinstall pin retainer (K) and reassemble the connector (F).

Pin	Extension Wire Color
44	Blue
45	Black
62	Red

NOTE: Be sure to note the rotational position of the terminals during removal. They are directional and need to be reinstalled in the same "clock" position.



10. Route the extension harness (B) along the existing harness (A) leading by the intake manifold (C) to the knock sensor (D), as shown.



*** IMPORTANT**

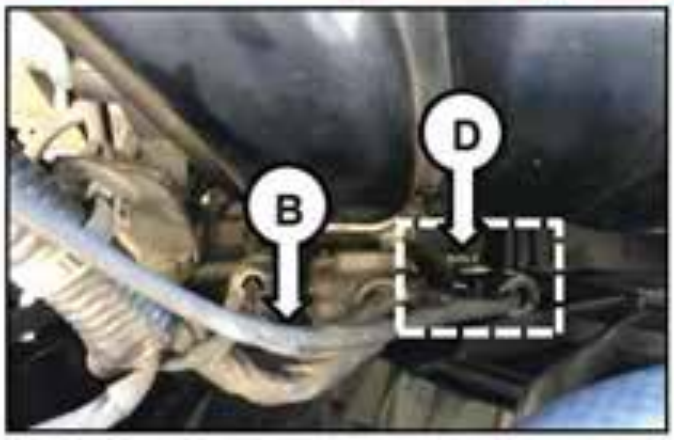
The harness (B) must be routed above and secured to the harness protector (L1) and UNDER the Breather Hose (L2) and Camshaft Position Sensor (L3).





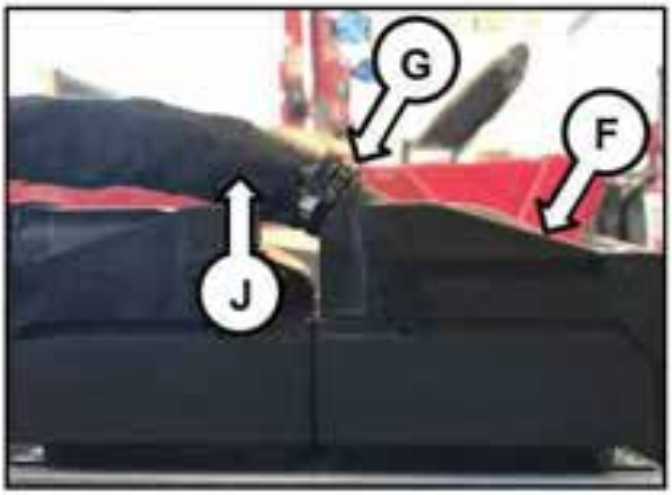


11. Connect the extension harness (B) to the knock sensor (D).

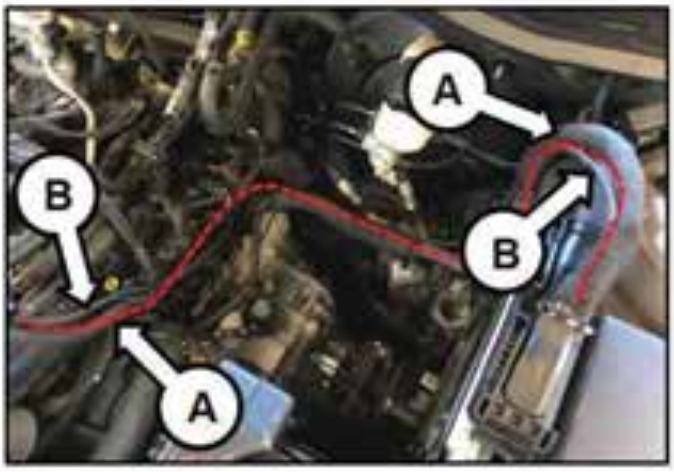


12. Cut off and discard the three (3) old knock sensor circuit terminals and the old knock sensor connector and secure the remaining wires to the new extension harness using the supplied electrical tape. **NOTE**: Complete removal of the old knock sensor wires is not necessary. Only remove the old terminals and connector.

13. Secure the extension harness at the connector (F) by replacing the cable-tie (G) removed in step 4 with a new supplied cable-tie and the electrical tape (J) removed in step 6 with new supplied electrical tape.



14. Secure the extension harness (B) to the existing harness (A) using the supplied cable-ties. Tuck and secure any excess wiring of the extension harness near the ECU with cable-tie.



15. Reinstall all removed components in the reverse order of removal.

16. Erase the P1326 DTC with the KDS and start the engine to confirm proper operation.

Engine Replacement Procedure:

1. Remove the engine assembly by referring to the "Engine And Transmission (Transaxle) Assembly → Engine And Transmission (Transaxle) Assembly → Repair procedures" chapter in the applicable Shop Manual on KGIS.

   Refer to TSB ENG190 for information regarding engine replacement practices.



2. After removal of the engine from the vehicle, remove all components that will need to be transferred by referring to the applicable Shop Manual on KGIS.

3. Place the new engine block on an engine stand.

4. Install all removed components from the old engine block onto the new engine block utilizing all parts from Service Kit I and II. Be advised of notes below.

Notes:

High Pressure Pump & Roller Tappet:

- Refer to TSB ENG083 for special attention and handling procedures of GDI-specific components.
- When installing the high pressure pump and roller tappet onto the new engine, apply engine oil to the roller tappet, and O-rings of the high pressure pump.

Tightening torques of pump bolts:
9.4 – 10.9 lb.ft (12.8 – 14.7 N.m, 1.3 – 1.5 kgf.m)

Tightening torques of pipe flare nut:
19.5 – 23.9 lb.ft (26.5 – 32.4 N.m, 2.7 – 3.3 kgf.m)

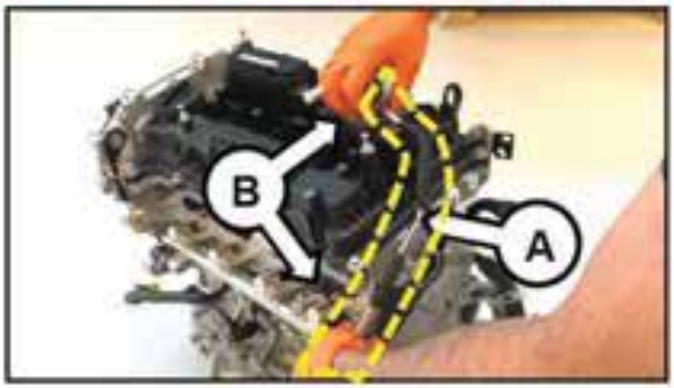


*** NOTICE**

Refer to TSB ENG083 for gasoline direct injection (GDI) specific information, including related warnings and cautions for handling high fuel pressure system components.

High Pressure Fuel Pipe:

1. Properly position the new fuel pipe (A) and then hand-tighten both flare nuts (B).



2. Install the pipe retaining bracket and bolt (C) and torque to specifications.

★ NOTICE

If the bracket and bolt are missing, order and install a new bracket and bolt.

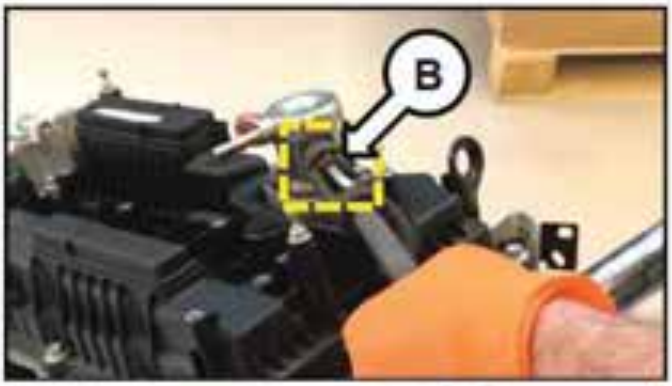
Tightening torque (bracket bolt):
5.8 – 8.7 lb.ft (7.8 –11.8 N.m, 0.8 – 1.2 kgf.m)

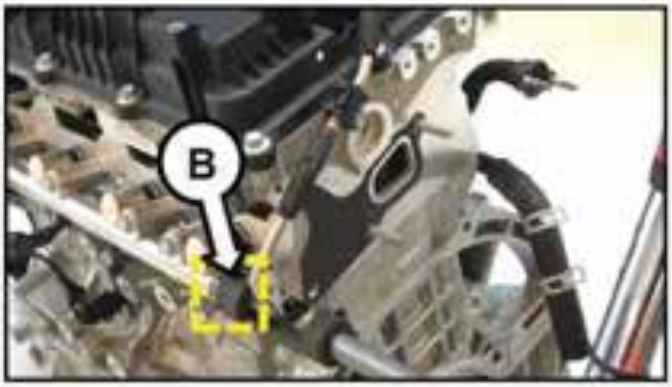


3. Using a click-type/electronic torque wrench and SST 09314-3Q100, torque both flare nuts (B) to specifications.

Tightening torque (flare nuts):
19.5 – 23.9 lb.ft (26.5 – 32.4 N.m, 2.7 – 3.3 kgf.m)

Click here to see a video tutorial of high pressure fuel pipe install (includes high pressure pump install).



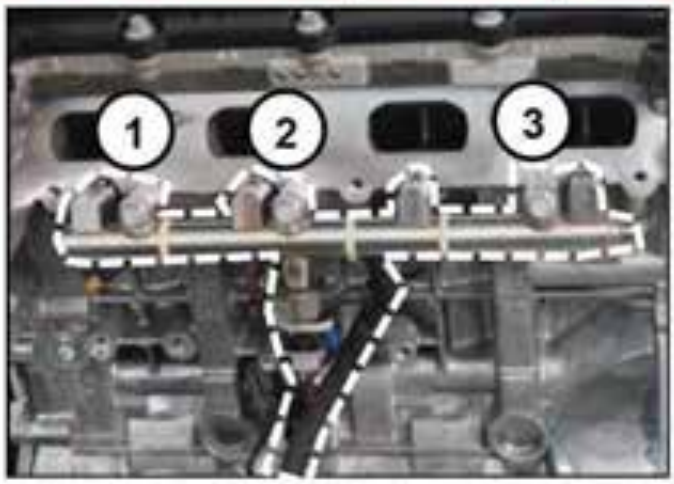


★ IMPORTANT

The high pressure fuel pipe bracket and bolt must be installed and properly torqued prior to torqueing the high pressure fuel pipe flare nuts.

Delivery Pipe:

- Refer to TSB ENG083 for special attention and handling procedures of GDI-specific components.
- Prior to installing the delivery pipe, be sure to replace all of the injector O-rings and injector retainers.
- Prior to installing the delivery pipe, apply engine oil to the injector O-rings.
- When installing the delivery pipe, use caution not to damage the tip of the injector.
- Be sure to replace the delivery pipe retaining bolts and torque them in the sequence shown.



Tightening torque of bolts:
13.7 – 17.4 lb.ft (18.6 – 23.5 N.m, 1.9 – 2.4 kgf.m)

*** NOTICE**

Combustion seals must be compressed after installation and before attempting to install into the cylinder head. Use SST 09353 2B000 (refer to TSB ENG083).

Dipstick Tube & Dipstick:

- Prior to installing the new tube, lubricate the o-ring located at the bottom of the tube with engine oil.
- Install the red dipstick included in Service Kit I.

Tightening torque of bolt:
5.8 – 8.7 lb.ft (7.8 – 11.8 N.m, 0.8 - 1.2 kgf.m)



Intake Manifold:

- Prior to installation, replace the intake manifold gaskets.
- Torque bolts in the sequence shown.

Tightening torque of bolts:
13.7 – 17.4 lb.ft (18.6 – 23.5 N.m, 1.9 – 2.4 kgf.m)

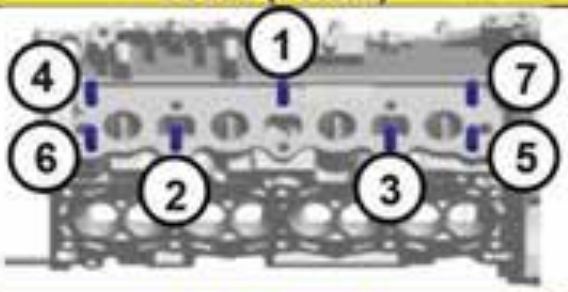


Exhaust Manifold:

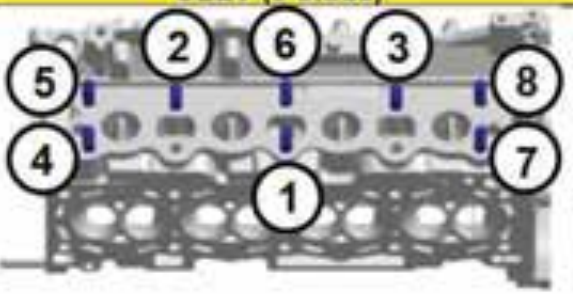
- All engines supplied under this Product Improvement Campaign have the exhaust manifold studs configured for SULEV engines.
- Using the pictures to the right, check the exhaust manifold stud location and quantity. Relocate as required for ULEV engines and obtain one (1) extra from the removed engine.
- Prior to installation, replace the exhaust manifold gasket and front muffler gasket.
- Torque nuts in the sequence shown.

Tightening torque of nuts:
36.2 – 39.7 lb.ft (49.0 – 53.9 N.m, 5.0 – 5.5 kgf.m)

SULEV (7 studs)



ULEV (8 studs)



***For 14MY Sorento (XMa) vehicles only: check the underhood emissions label and record whether the label references ULEV or SULEV. This information is needed to select/order the correct replacement engine.**


KIA MOTORS CORPORATION
VEHICLE EMISSION CONTROL INFORMATION

Conforms to regulations : 2014 MY

U.S.EPA : T2B5 LDV OBD : CA II Fuel : Gasoline

California : ULEV PC OBD : CA II Fuel : Gasoline

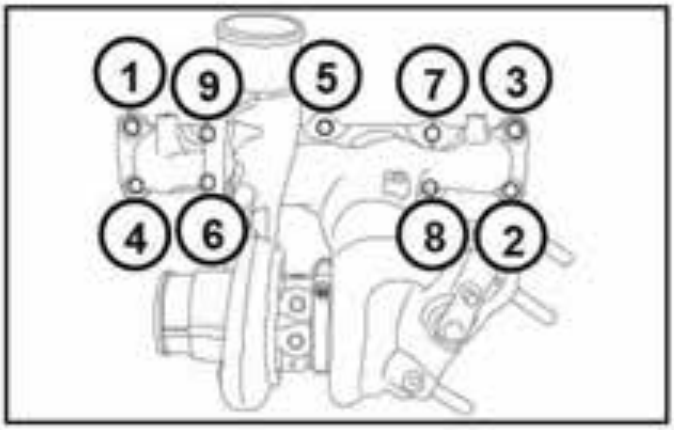
Engine : EKMXV02.44PE DFSHD2SZ2WS-TWCTWC
Evap. : EKMXR0150DRE No adjustments needed. A402

[WARNING] 3341/-2G4E2

Loaded I/W (ceiling of permissible) four-wheel drive or traction control-equipped vehicles must be conducted on a four-wheel drive speed synchronized dynamometer. Otherwise, a non-loaded test procedure must be performed.

- On Turbo engines, replace the turbocharger oil feed line and gaskets.

Tightening torque of oil feed line bolt:
8.7 – 13.0 lb.ft (11.8 – 17.7 N.m, 1.2 – 1.8 kgf.m)
Tightening torque of oil feed line nuts:
5.8 – 8.7 lb.ft (7.8 – 11.8 N.m, 0.8 – 1.2 kgf.m)
Tightening torque of oil drain line nuts and bolts:
5.8 – 8.7 lb.ft (7.8 – 11.8 N.m, 0.8 – 1.2 kgf.m)



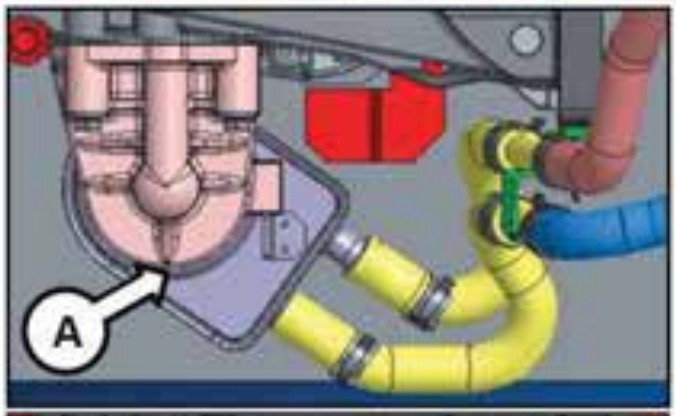
- Torque exhaust manifold nuts in the sequence shown.

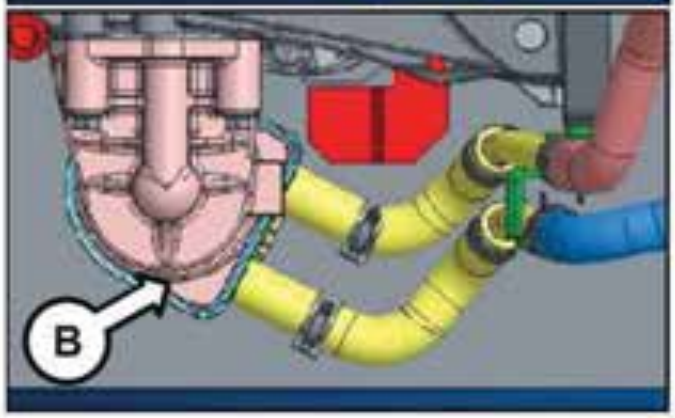
Tightening torque of nuts:
36.2 – 39.7 lb.ft (49.0 – 53.9 N.m, 5.0 – 5.5 kgf.m)

Oil Cooler Tube Assembly:

New engines may be supplied with a different oil cooler. Use steps below to determine the need for a replacement oil cooler tube assembly.

- If the new engine's (bigger) oil cooler (A) does not match the old engine's (smaller) oil cooler (B), replace the oil cooler tube assembly with the improved part. See parts table on page 15.
- If the new engine's (bigger) oil cooler (A) matches the old engine's (bigger) oil cooler (A), reuse the old engine's oil cooler tube assembly.
- If the new engine's (smaller) oil cooler (B) matches the old engine's (smaller) oil cooler (B), reuse the old engine's oil cooler tube assembly.





Drive Plate / Flywheel Bolts:

- Replace all seven (7) drive plate (AT) or flywheel (MT) bolts.

Tightening torque of nuts:
86.8 – 93.9 lb.ft (117.7 – 125.5 N.m, 12.0 – 13.0 kgf.m)



Drive Plate Bolt (A/T)



Flywheel Bolt (M/T)

Torque Converter

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



Not Fully Inserted



Fully Inserted

5. Reinstall the assembled engine and transmission/transaxle into the vehicle.

   Be sure to:

   - Fill crankcase with 5W-30 oil (~5.8 quarts).
   - Fill and bleed the cooling system with 50/50 coolant or mixture appropriate for area.
   - Pressurize the fuel system before starting the vehicle.
   - Reset engine adaptive values and perform steering angle sensor calibration.

   Refer to TSB ENG190 for information regarding engine replacement practices.

6. Verify proper operation of the vehicle with road test, and **erase any stored DTCs** (e.g., EPS, ESC, and TPMS) that may have been set by this procedure. Verify no leaks exist and ensure engine oil and coolant are at their proper level.

   If any DTCs are still active, follow any related diagnosis and repair as needed.

SUBJECT: ENGINE REPLACEMENT INSTRUCTIONS FOR DTC P1326 (PI1803W/X)

AFFECTED VEHICLE RANGE:

Model	Production Date Range
11-13MY Optima (QF/TF)	August 12, 2010 through September 27, 2013
14MY Optima (QF)	August 28, 2013 through May 15, 2014
12-14MY Sorento (XMa)	April 19, 2011 through February 10, 2014
11-13MY Sportage (SL)	December 30, 2010 through August 30, 2013

REQUIRED TOOL:

Tool Name	Tool Part No.	Figure	Comments
Torque Wrench Socket	09314 3Q100		Refer to TSB ENG083 for detailed usage instructions
Injector Combustion Seal Ring Installer	09353 2B000		
Pin Tool	91400 00000QQK		Auto-shipped to Dealers in 10/2018. Replacements can be ordered through Mobis Parts America.
Click-Type or Electronic Torque Wrench	N/A		Locally Sourced

REQUIRED PARTS:

Part Name	MY	Model	Part Number		Figure
			2.4GDI	2.0T-GDI	
Engine Long Block	2011-2013	QF	21101 2GK05QQK* 21101 2GK14QQK*, or 21101 2GK05QQKR*	21101 2GK07QQK** 21101 2GK15QQK**, or 21101 2GK07QQKR**	
		TF			
		SL	-	21101 2GK07QQKR	
	2012-2013	XMa	21101 2GK09QQK or 21101 2GK09QQKR	-	
	2014	QF	21101 2GK06QQK or 21101 2GK06QQKR	21101 2GK08QQK or 21101 2GK08QQKR	
		XMa ULEV***	21101 2GK10QQK, 21101 2GK11QQK, or 21101 2GK11QQKR	-	
		XMA SULEV***	21101 2GK11QQK or 21101 2GK11QQKR	-	

*2.4GDI engines for 2011-2013 QF and TF are compatible and interchangable.
**2.0T-GDI engines for 2011-2013 QF and TF are compatible and interchangable.
***See page 12 for details about underhood label check.

Part Name	Engine	Part Number	Figure
Service Kit I	2.4GDI	21111 2GK50QQK	
	2.0T-GDI	21111 2GK60QQK	

SUBJECT: ENGINE REPLACEMENT INSTRUCTIONS FOR DTC P1326 (PI1803W/X)

Part Name	Engine	Part Number	Figure
Service Kit II	2.4GDI and 2.0T-GDI	21111 2GK70QQK	
Drive Plate Bolts	2.4GDI and 2.0T-GDI	23311 25050	
		23231 25200 (MT)	
Oil Cooler Tube Assembly (replacement is conditional, refer to page 13)	2.4GDI	25470 2G050QQK	
	2.0T-GDI	25470 2G650QQK	
KS Extension Harness	2.4GDI and 2.0T-GDI	*91400 2T100QQK	

*NOTE: Old part number 91400 2T000QQK has been superseded by new part number 91400 2T100QQK.

WARRANTY INFORMATION (PI1803**W1**, MIL ON WITH P1326):

N Code: N99 C Code: C99

Model	Claim Type	Causal P/N	Qty.	Repair Description	Labor Op Code	Op Time	Replacement P/N	Qty.
Opt. (QF) 2.4L	R	23060 2G400	0	(PI1803W1) 2.4L GDI MIL ON with P1326, KSDS Wire Harness Inspection Pass, & Engine Replacement	180A23R0	8.4 M/H	21111 2GK50QQK	1
							21111 2GK70QQK	1
							(AT) 23311 25050	7
							(MT) 23231 25200	
							(11-13MY) 21101 2GK05QQKR	1
							(14MY) 21101 2GK06QQKR	
				(PI1803W1) 2.4L GDI MIL ON with P1326, KSDS Wire Harness Inspection Fail, KSDS Extension Harness Install	180A23R1	0.8 M/H	*91400 2T100QQK	1
Opt. (QF) 2.0L T	R	23060 2G400	0	(PI1803W1) 2.0L T-GDI MIL ON with P1326, KSDS Wire Harness Inspection Pass, & Engine Replacement	180A23R2	8.6 M/H	21111 2GK60QQK	1
							21111 2GK70QQK	1
							(AT) 23311 25050	7
							(MT) 23231 25200	
							(11-13MY) 21101 2GK07QQKR	1
							(14MY) 21101 2GK08QQKR	
				(PI1803W1) 2.0L T-GDI MIL ON with P1326, KSDS Wire Harness Inspection Fail, KSDS Extension Harness Install	180A23R3	0.8 M/H	*91400 2T100QQK	1

*NOTE: Old part number 91400 2T000QQK has been superseded by new part number 91400 2T100QQK.

SUBJECT: ENGINE REPLACEMENT INSTRUCTIONS FOR DTC P1326 (PI1803W/X)

Model	Claim Type	Causal P/N	Qty.	Repair Description	Labor Op Code	Op Time	Replacement P/N	Qty.
Opt. (TF) 2.4L	R	23060 2G400	0	(PI1803W1) 2.4L GDI MIL ON with P1326, KSDS Wire Harness Inspection Pass, & Engine Replacement	180142R0	8.4 M/H	21111 2GK50QQK	1
							21111 2GK70QQK	1
							(AT) 23311 25050	7
							(MT) 23231 25200	
							21101 2GK05QQKR	1
				(PI1803W1) 2.4L GDI MIL ON with P1326, KSDS Wire Harness Inspection Fail, KSDS Extension Harness Install	180142R5	0.8 M/H	*91400 2T100QQK	1
Opt. (TF) 2.0L T	R	23060 2G400	0	(PI1803W1) 2.0T-GDI MIL ON with P1326, KSDS Wire Harness Inspection Pass, & Engine Replacement	180142R3	8.4 M/H	21111 2GK50QQK	1
							21111 2GK70QQK	1
							(AT) 23311 25050	7
							(MT) 23231 25200	
							21101 2GK07QQKR	1
				(PI1803W1) 2.0T-GDI MIL ON with P1326, KSDS Wire Harness Inspection Fail, KSDS Extension Harness Install	180142R8	0.8 M/H	*91400 2T100QQK	1
Sor. (XMa) 2.4L	R	21020 2G010	0	(PI1803W1) 2.4L GDI 2WD MIL ON with P1326, KSDS Wire Harness Inspection Pass, & Engine Replacement	180A24R0	8.4 M/H	21111 2GK50QQK	1
							21111 2GK70QQK	1
							(AT) 23311 25050	7
							(MT) 23231 25200	
							(12-13MY) 21101 2GK09QQKR	1
							(14MY ULEV) 21101 2GK11QQKR	
							(14MY ULEV or SULEV) 21101 2GK11QQKR	
				(PI1803W1) 2.4L GDI 2WD MIL ON with P1326, KSDS Wire Harness Inspection Fail, KSDS Extension Harness Install	180A24R1	0.8 M/H	*91400 2T100QQK	1
				(PI1803W1) 2.4L GDI AWD MIL ON with P1326, KSDS Wire Harness Inspection Pass, & Engine Replacement	180A24R2	8.6 M/H	21111 2GK50QQK	1
							21111 2GK70QQK	1
							(AT) 23311 25050	7
							(MT) 23231 25200	
							(12-13MY) 21101 2GK09QQKR	1
							(14MY ULEV) 21101 2GK11QQKR	
							(14MY ULEV or SULEV) 21101 2GK11QQKR	
				(PI1803W1) 2.4L GDI AWD MIL ON with P1326, KSDS Wire Harness Inspection Fail, KSDS Extension Harness Install	180A24R3	0.8 M/H	*91400 2T100QQK	1

*NOTE: Old part number 91400 2T000QQK has been superseded by new part number 91400 2T100QQK.

SUBJECT: ENGINE REPLACEMENT INSTRUCTIONS FOR DTC P1326 (PI1803W/X)

Model	Claim Type	Causal P/N	Qty.	Repair Description	Labor Op Code	Op Time	Replacement P/N	Qty.
Spo. (SL) 2.0L T	R	23060 2G400	0	(PI1803W1) 2.0L T-GDI 2WD MIL ON with P1326, KSDS Wire Harness Inspection Pass, & Engine Replacement	180143R3	7.7 M/H	21111 2GK60QQK	1
							21111 2GK70QQK	1
							(AT) 23311 25050	7
							(MT) 23231 25200	
							21101 2GK07QQKR	1
				(PI1803W1) 2.0L T-GDI 2WD MIL ON with P1326, KSDS Wire Harness Inspection Fail, KSDS Extension Harness Install	180143R8	0.9 M/H	*91400 2T100QQK	1
				(PI1803W1) 2.0L T-GDI AWD MIL ON with P1Pass, & Engine Replacement	180143R4	8.1 M/H	21111 2GK60QQK	1
							21111 2GK70QQK	1
							(AT) 23311 25050	7
							(MT) 23231 25200	
							21101 2GK07QQKR	1
				(PI1803W1) 2.0L T-GDI AWD MIL ON with P1326, KSDS Wire Harness Inspection Fail, KSDS Extension Harness Install	180143R9	0.9 M/H	*91400 2T100QQK	1

*NOTE: Old part number 91400 2T000QQK has been superseded by new part number 91400 2T100QQK.

SUBJECT: ENGINE REPLACEMENT INSTRUCTIONS FOR DTC P1326 (PI1803W/X)

WARRANTY INFORMATION (PI1803X1, ENGINE SEIZED/SEVERE KNOCKING):
N Code: N99 C Code: C99

Model	Claim Type	Causal P/N	Qty.	Repair Description	Labor Op Code	Op Time	Replacement P/N	Qty.
Opt. (QF) 2.4L	R	23060 2G400	0	(PI1803X1) 2.4L GDI Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Pass	180A23R4	8.4 M/H	21111 2GK50QGK	1
							21111 2GK70QGK	1
							(AT) 23311 25050	7
							(MT) 23231 25200	
							(11-13MY) 21101 2GK05QGKR	1
							(14MY) 21101 2GK06QGKR	
				(PI1803X1) 2.4L GDI Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Fail, KSDS Wire Harness Install	180A23R6	8.9 M/H	21111 2GK50QGK	1
							21111 2GK70QGK	1
							(AT) 23311 25050	7
							(MT) 23231 25200	
							(11-13MY) 21101 2GK05QGKR	1
							(14MY) 21101 2GK06QGKR	
							*91400 2T100QGK	1
Opt. (QF) 2.0L T	R	23060 2G400	0	(PI1803X1) 2.0L T-GDI Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Pass	180A23R5	8.7 M/H	21111 2GK60QGK	1
							21111 2GK70QGK	1
							(AT) 23311 25050	7
							(MT) 23231 25200	
							(11-13MY) 21101 2GK07QGKR	1
							(14MY) 21101 2GK08QGKR	
				(PI1803X1) 2.0L T-GDI Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Fail, KSDS Wire Harness Install	180A23R7	9.2 M/H	21111 2GK60QGK	1
							21111 2GK70QGK	1
							(AT) 23311 25050	7
							(MT) 23231 25200	
							(11-13MY) 21101 2GK07QGKR	1
							(14MY) 21101 2GK08QGKR	
							*91400 2T100QGK	1
Opt. (TF) 2.4L	R	23060 2G400	0	(PI1803X1) 2.4L GDI Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Pass	180142RA	8.4 M/H	21111 2GK50QGK	1
							21111 2GK70QGK	1
							(AT) 23311 25050	7
							(MT) 23231 25200	
							21101 2GK05QGKR	1
				(PI1803X1) 2.4L GDI Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Fail, KSDS Wire Harness Install	180142RF	8.9 M/H	21111 2GK50QGK	1
							21111 2GK70QGK	1
							(AT) 23311 25050	7
							(MT) 23231 25200	
							21101 2GK05QGKR	1
							*91400 2T100QGK	1

***NOTE: Old part number 91400 2T000QGK has been superseded by new part number 91400 2T100QGK.**

SUBJECT: ENGINE REPLACEMENT INSTRUCTIONS FOR DTC P1326 (PI1803W/X)

Model	Claim Type	Causal P/N	Qty.	Repair Description	Labor Op Code	Op Time	Replacement P/N	Qty.
Opt. (TF) 2.0L T	R	23060 2G400	0	(PI1803X1) 2.0T-GDI Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Pass	180142RD	8.7 M/H	21111 2GK60QGK	1
							21111 2GK70QGK	1
							(AT) 23311 25050	7
							(MT) 23231 25200	
							21101 2GK07QGKR	1
				(PI1803X1) 2.0T-GDI Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Fail, KSDS Wire Harness Install	180142RI	9.2 M/H	21111 2GK60QGK	1
							21111 2GK70QGK	1
							(AT) 23311 25050	7
							(MT) 23231 25200	
							21101 2GK07QGKR	1
							*91400 2T100QGK	1
Scr. (XMa) 2.4L	R	21020 2G010	0	(PI1803X1) 2.4L GDI 2WD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Pass	180A24R4	8.4 M/H	21111 2GK50QGK	1
							21111 2GK70QGK	1
							(AT) 23311 25050	7
							(MT) 23231 25200	
							(12-13MY) 21101 2GK09QGKR	1
							(14MY ULEV) 21101 2GK11QGKR	
							(14MY ULEV or SULEV) 21101 2GK11QGKR	
				(PI1803X1) 2.4L GDI 2WD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Fail, KSDS Wire Harness Install	180A24R6	8.9 M/H	21111 2GK50QGK	1
							21111 2GK70QGK	1
							(AT) 23311 25050	7
							(MT) 23231 25200	
							(12-13MY) 21101 2GK09QGKR	1
							(14MY ULEV) 21101 2GK11QGKR	
							(14MY ULEV or SULEV) 21101 2GK11QGKR	
							*91400 2T100QGK	1
				(PI1803X1) 2.4L GDI AWD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Pass	180A24R5	8.6 M/H	21111 2GK50QGK	1
							21111 2GK70QGK	1
							(AT) 23311 25050	7
							(MT) 23231 25200	
							(12-13MY) 21101 2GK09QGKR	1
							(14MY ULEV) 21101 2GK11QGKR	
							(14MY ULEV or SULEV) 21101 2GK11QGKR	
				(PI1803X1) 2.4L GDI AWD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Fail, KSDS Wire Harness Install	180A24R7	9.1 M/H	21111 2GK50QGK	1
							21111 2GK70QGK	1
							(AT) 23311 25050	7
							(MT) 23231 25200	
							(12-13MY) 21101 2GK09QGKR	1
							(14MY ULEV) 21101 2GK11QGKR	
							(14MY ULEV or SULEV) 21101 2GK11QGKR	
							*91400 2T100QGK	1

*NOTE: Old part number 91400 2T000QGK has been superseded by new part number 91400 2T100QGK.

SUBJECT: ENGINE REPLACEMENT INSTRUCTIONS FOR DTC P1326 (PI1803W/X)

Model	Claim Type	Causal P/N	Qty.	Repair Description	Labor Op Code	Op Time	Replacement P/N	Qty.
Spo. (SL) 2.0L T	R	23060 2G400	0	(PI1803X1) 2.0L T-GDI 2WD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Pass	180143RD	7.7 M/H	21111 2GK60QQK	1
							21111 2GK70QQK	1
							(AT) 23311 25050	7
							(MT) 23231 25200	
							21101 2GK07QQKR	1
				(PI1803X1) 2.0L T-GDI 2WD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Fail, KSDS Wire Harness Install	180143RI	8.3 M/H	21111 2GK60QQK	1
							21111 2GK70QQK	1
							(AT) 23311 25050	7
							(MT) 23231 25200	
							21101 2GK07QQKR	1
							*91400 2T100QQK	1
				(PI1803X1) 2.0L T-GDI AWD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Pass	180143RE	8.1 M/H	21111 2GK60QQK	1
							21111 2GK70QQK	1
							(AT) 23311 25050	7
							(MT) 23231 25200	
							21101 2GK07QQKR	1
				(PI1803X1) 2.0L T-GDI AWD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Fail, KSDS Wire Harness Install	180143RJ	8.7 M/H	21111 2GK60QQK	1
							21111 2GK70QQK	1
							(AT) 23311 25050	7
							(MT) 23231 25200	
							21101 2GK07QQKR	1
							*91400 2T100QQK	1

NOTE: Refer to Warranty Bulletin 2018-14 for details regarding coolant and substitute transportation reimbursement requirements.

***Old part number 91400 2T000QQK has been superseded by new part number 91400 2T100QQK.**

Use sublet code 'X3' with a maximum allowed amount of $19.80 for "ENGINE R&R" engine oil reimbursement.

If the replacement of the Oil Cooler Tube Assembly was required, please manually enter the applicable Oil Cooler Tube Assembly part number to the claim's related parts section.

Dispose of old parts in accordance with local, state, and Federal regulations.

★ NOTICE

VIN inquiry data for this repair is provided for tracking purposes only. Kia retailers should reference PI1803W/X* when accessing the WebDCS system.

Appendix 1 (Warranty Claim Authorization)

	Scenario	Description	Action Required
1	Campaign - TSB # PI1803W/X Case for Warranty Authorization **NO INSPECTION**	Wiring Signal Interference Check cannot be completed due to engine seizure or other engine failure (won't run long enough to complete the test)	**TL PWA required for all dealers – Video of condition and WRTY143 form required*** Video requirement examples below are for illustration purposes, individual requirements will vary based upon the condition reported: • Video should be continuous and show the VIN (most convenient VIN plate) and pan to show the engine condition • For engine seizures, attempt to turn over engine with breaker bar in video • For hole in engine block, show hole in video

Appendix 2 (Video Capture & Upload)

Capturing a video is often helpful in assisting the Kia Techline Agent in determining a proper diagnosis strategy. Once a TechLine case is open, the following procedure will guide you through the video capture and upload.

The Chrome™ browser should be used to access the Techline portal. Follow the steps below to clear the default browser if it is other than Chrome™.

For KDS Tab 10.1 Tablets:

1. Select "Settings" from the App Screen.
2. Select the "General" tab at the top.
3. Select "Default Applications".
4. If "Internet" is the default browser, select the CLEAR button.

   If "Chrome" is the default browser, further action is not required.



5. When opening the Techline portal, select "Chrome" and select Always".



For KDS Tab S2 Tablets:

1. Select "Settings" from the App Screen.
2. Select "Applications".
3. Select "Default Applications".



4. Select "Browser app".



5. Ensure "Chrome" is selected.



Setting Your Video Size to "Limit to Email"

1. Select "Camera" from the App Screen.



2. Select the Settings icon.



3. Select the Video Camera icon.



4. Ensure "Limit to email" is selected.



Attaching Video to a Techline Case

1. Open K-Support in the device Chrome™ browser or select the "Techline" button on KDS home page.

   https://ksupport.kiausa.com



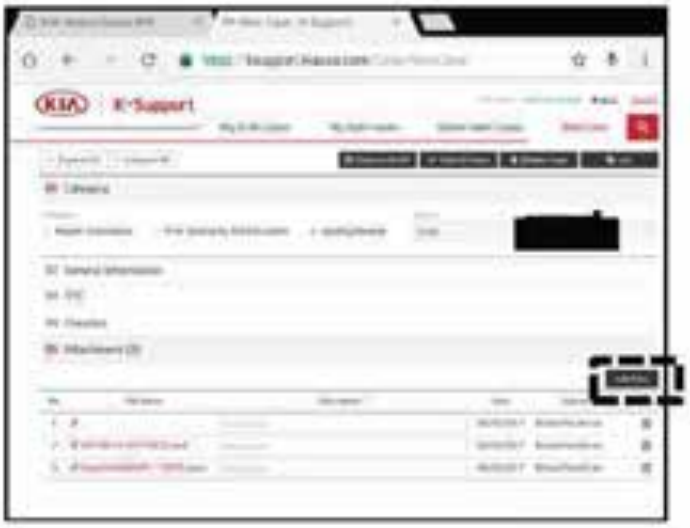
2. Open your existing Techline case for the vehicle requiring a video capture by selecting the case number.



3. Select "Attachment".



4. Select "Add Files".



5. Select "Camcorder" and the video camera will open.



6. Start by recording the VIN. Ensure sun glare is not reflecting off windows or other objects.

   Without stopping the recording, capture the area of the vehicle displaying the issue. i.e.;

   - Engine Noise – record the engine.
   - Hole In Block – record the side of the engine with the damage.
   - Seized Engine – record a technician trying to turn the engine over with a breaker bar.



*** NOTICE**

NOTE: Ensure the video size is set to "Limit to email" (see page 24). <u>Only record the VIN and the engine exhibiting the concern.</u> Any additional information will increase the size of the video and make it difficult to upload or download.

7. Stop the video when you captured what is needed. Select "OK" to use this capture or "RETRY" to capture the video again.

8. Ensure a description of the recording. For example, engine knock or smoke from exhaust.

9. Select "Submit Case".



10. Select "Yes" when the confirmation message below appears.

    Note: Selecting anything other than "Yes" will not save the video capture.



PE19-004

KIA

TAB 76_PI180 WX_TSB_R - submitted on line

	GROUP	MODEL
KIA	**Product Improvement**	**See Model List on Page 1**
	NUMBER	DATE
	PI1803W/X (Rev 3, 04/03/2019)	**November 2018**

PRODUCT IMPROVEMENT CAMPAIGN

SUBJECT: ENGINE REPLACEMENT INSTRUCTIONS FOR DTC P1326 (PI1803W/X)

★ NOTICE

This bulletin has been revised to include additional information. New/revised sections of this bulletin are indicated by a black bar in the margin area.

This bulletin provides information related to the Technical Service Bulletin previously published in November 2018 (PI1803, Rev 1, 01/02/2018) titled "Knock Sensor Detection System - ECU Logic Improvement". Specifically, this bulletin provides instructions on which procedures to follow if, after installation of the KSDS, any one of the subject vehicles below returns to the dealer with Diagnostic Trouble Code ("DTC"), P1326.

Year	Model	Engine	Production Date
2011-2013	Optima (QF/TF)	2.4L & 2.0L T-GDI	8/12/10 – 9/27/13
2014	Optima (QF)	2.4L & 2.0L T-GDI	8/28/13 – 5/15/14
2011-2013	Sportage (SL)	2.0L T-GDI	12/30/10 – 8/30/13
2012-2014	Sorento (XMa)	2.4L GDI	4/19/11 – 2/10/14

If DTC P1326 is present, first check for any wiring signal interference following the procedure set forth below before determining whether an engine replacement is necessary. Based on the results of the Wiring Signal Interference Check, dealers are to perform either the Knock Sensor Wiring Repair or, if the engine noise inspection result confirms it, the Engine Long-Block Replacement, according to the procedures in this TSB.

If the vehicle's engine is already seized or severely knocking, dealers are to perform the Engine Long-Block Replacement **and** the Wiring Signal Interference Check according to the procedures in this TSB.

A Vehicle Diagnosis Number (VDN) must be created with DTC P1326, prior to performing PI1803W/X. If a VDN is not created, Warranty claim submission issues may occur.

Before conducting the procedure, verify the vehicle is included in the list of affected VINs.

★ NOTICE

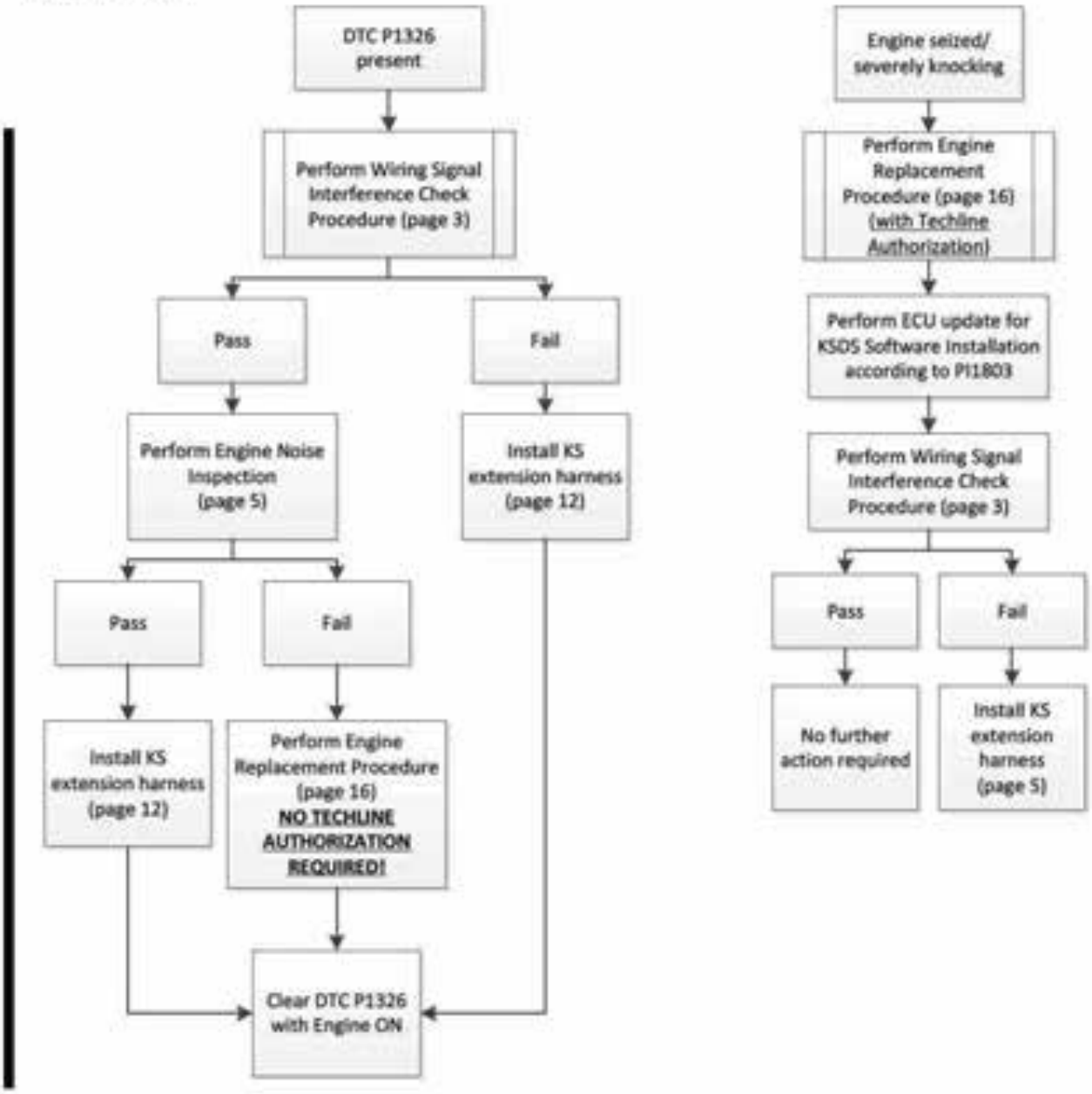
To ensure complete customer satisfaction, always remember to refer to WebDCS Warranty Coverage (validation) Inquiry Screen (Service → Warranty Coverage → Warranty Coverage Inquiry) for a list of any additional campaigns that may need to be performed on the vehicle before returning it to the customer.

File Under: <Product Improvement>

Circulate To: ☒ General Manager ☒ Service Manager ☒ Parts Manager ☒ Service Advisors ☒ Technicians ☒ Body Shop Manager ☐ Fleet Repair

SUBJECT: ENGINE REPLACEMENT INSTRUCTIONS FOR DTC P1326 (PI1803W/X)

Flow Chart:



Note: **If any concerns arise after completing the flow chart, open a Techline case online.**

Wiring Signal Interference Check Procedure:

1. Using the KDS **(connected to the Internet)**, perform a Fault Code Search and confirm DTC P1326 is present.
   - If P1326 is present, proceed to the next step to perform the wiring signal interference check.
   - If the engine is seized or severely knocking, proceed to the engine replacement procedure on page 16 (with Techline authorization per Flow Chart).



2. Start/warm up the engine and ensure **ENGINE OIL** is at operating temperature (176°F).



3. From the KDS Home Screen, select S/W Management.



4. Select Engine Control → Wiring Signal Interference Check.



SUBJECT: ENGINE REPLACEMENT INSTRUCTIONS FOR DTC P1326 (PI1803W/X)

5. Ensure the engine is on and at idle and **ENGINE OIL** temperature is at 176°F degrees or higher. Select OK to proceed.



5b. Select OK to proceed.

NOTE: This test should only be performed if Knock Sensor Detection System - ECU Logic Improvement (PI1803) has previously been completed.



5c. If the conditions are not met, a pop-up as shown will be displayed.



6. Enter vehicle mileage and RO number (VIN is automatically populated).



7. Wiring Signal Interference Check test will begin and take about three (3) minutes to complete. **NOTE**: Do not push on the accelerator pedal.



- If the result is "OK", turn the engine off and proceed to the Engine Noise Inspection procedure below.

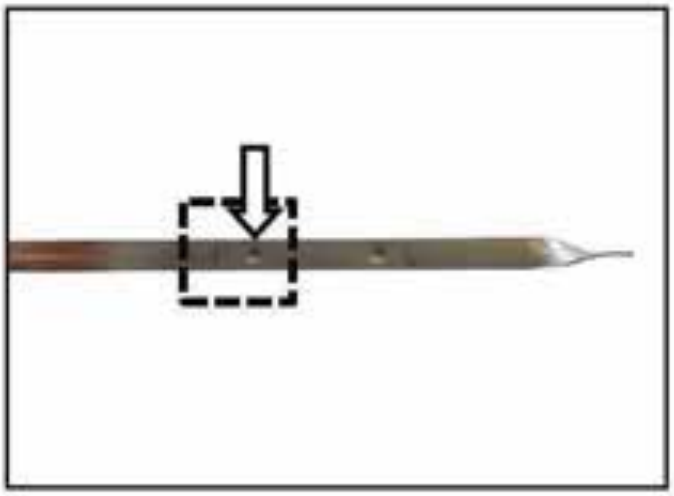


- If the result is "NOT OK", turn the engine off and proceed to **step 2** of the Knock Sensor (KS) Extension Harness Installation procedure on page 12.



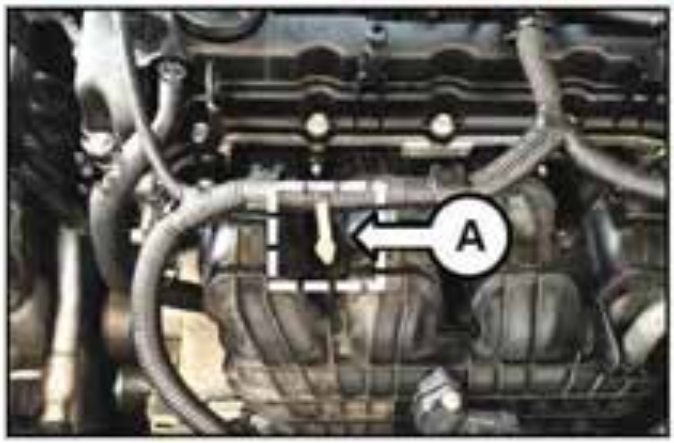
Engine Noise Inspection Procedure:

1. Prior to inspection, ensure the KDS is fully charged and is connected to the internet every day to ensure the latest update is received and installed.
   - Engine oil level should be at the "FULL" mark. Top off with 5W-30 if required.
   - Test requires the engine to be in satisfactory running condition and able to idle normally.
   - Engine coolant temperature should be above minimum test temperature: 185°F (85°C).



If the engine's running condition is poor due to issues unrelated to a connecting rod knocking noise (faulty sensors, intake/exhaust manifold leak, catalytic converter, etc.), diagnose and repair prior to performing this inspection procedure. If the engine cannot be tested or has other major concerns, **see Warranty Claim Authorization information on page 30.**

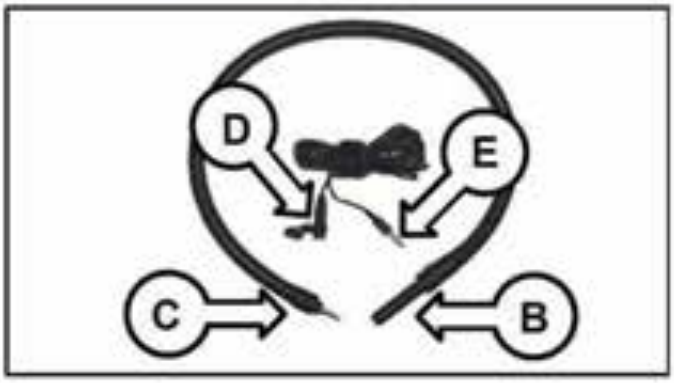
2. With the engine off, remove the dipstick (A).



*** NOTICE**

Engine cover removed in images for demonstration-only purposes.

3. Insert the engine noise tester SST adapter (B) into the dipstick tube then start and idle the engine.



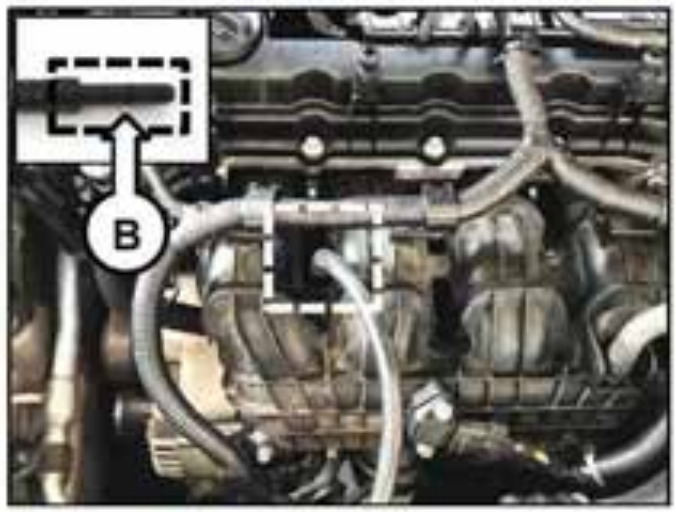
*** NOTICE**

To avoid false readings, ensure the adapter (B) is properly inserted into the dipstick tube and that the tube is not in contact with the intake manifold.

If the dipstick tube is not centered and is close to or touching the manifold, carefully adjust (bend) and center the dipstick tube with a pry bar.

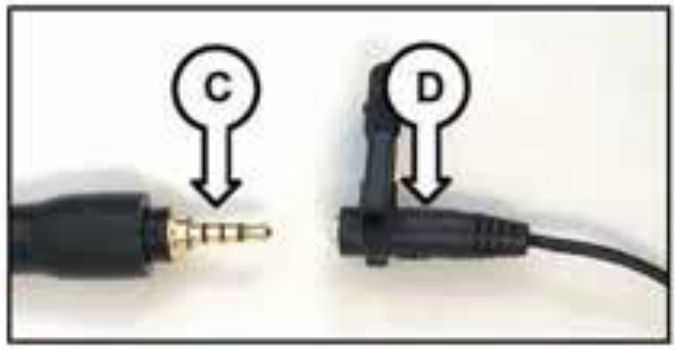


Not Centered Centered



Click here for a video tutorial of the Inspection Procedure.

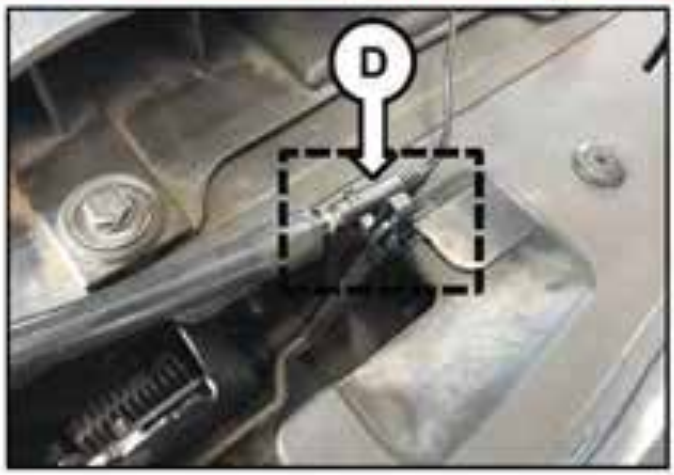
4. Connect the 3.5 mm male end of the engine noise tester SST (C) to the 3.5 mm female end of the extension cable (D).



5. Attach the SST clip of the extension cable (D) to the hood latch.

★ NOTICE

Make sure to route the extension cable away from moving parts (pulleys, fan, and belts and be careful not to get it pinched between door and body or window, etc.).



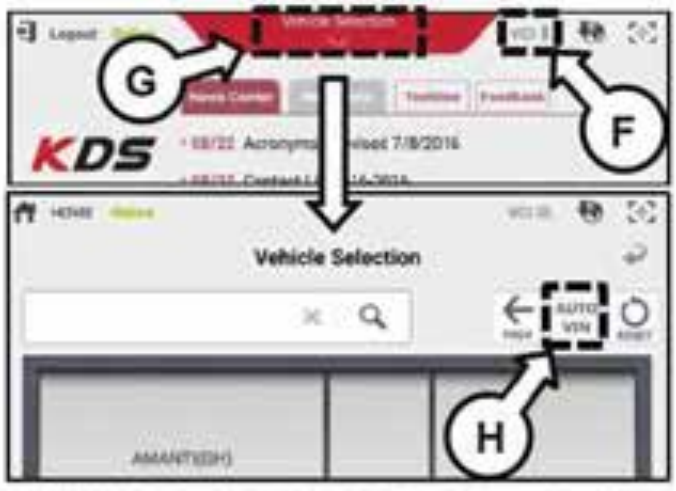
6. Connect the 3.5 mm male end (E) of the extension cable to the headphone port located at the upper left corner (KDS version 1.0) or at the bottom of the tablet (KDS version 2.0).



7. Connect the VCI-II to the OBD-II connector and launch the KDS application from the KDS tablet home page.



8. Confirm communication with VCI (F) and then configure the vehicle (G) using the **AUTO VIN** (H) feature.



9. Swipe up the "More" tab from the lower screen of the KDS and select "Special Inspection".



★ NOTICE

If the vehicle model/model year does not qualify for this campaign, a message will pop up; if so, verify that the vehicle is included in the list of affected VINs.

10. Complete the vehicle information form on the screen:

- Mileage
- RO number
- Select "Verify" to verify the VIN

Note: VIN must be verified with the "Verify" function in order to proceed to the next step.

Select "Next" to continue.



11. Confirm that all of the pre-inspection items listed on the screen are true:

- Engine Oil Level – Normal
- Coolant Level – Normal
- Engine Cover – Installed
- Driver Window – Opened
- A/C & Blower Motor – OFF
- Audio & All Accessories – OFF
- Engine – Warm up (185°F or higher)
- Insert "A" into dipstick tube
- Connect "B" part at tablet headphone port

Select "Next" after checking items mentioned above.



12. The program will automatically check the engine sensors' data. Select the "Next" button if all the conditions are satisfied.
    - Engine Coolant Temperature: 185°F or higher
    - A/C Request to ECU: OFF

    Note: If the test item result is "NOT GOOD", correct the condition then select "Refresh Data".



13. Follow the instructions on the screen then select "Next".



14. Prior to the initial measurement, the program will automatically check if the engine noise tester is installed and operating correctly at engine idle and perform an internal diagnosis.

    Begin the second part of the engine noise tester check by selecting "Start".



*** NOTICE**

If the measured noise level is too low or abnormally high, an engine noise tester inspection message will pop up. Check and correct as necessary and start again.

15. With the vehicle in Park (A/T) / Neutral (M/T), increase and maintain the engine speed at 2,000-3,000 RPM for thirty (30) seconds.

    The program will automatically proceed to the next step when the engine noise tester is ready.



*** NOTICE**

Once the RPM is in the specified range, the time count (green bars) will be initialized.

16. With the vehicle in Park (A/T) / Neutral (M/T), begin the "2000rpm Test" by increasing and maintaining engine speed between 1,900-2,100 (2.4L) or 1,900-2,200 (2.0T) RPM until all three (3) measurements are complete.

17. When the "2000rpm Test" is complete, release the accelerator pedal so that engine maintains idle state for the "Idle Test".



18. The "Idle Test" will automatically begin. Keep the engine at idle and wait until all three (3) measurements are complete.



19. After the completion of the engine noise inspection, the KDS will automatically generate/display a "PASS" or "NO PASS" result.

    - If the inspection result is "PASS", proceed to the KS Extension Harness Installation procedure on page 12.
    - If the inspection result is "NO PASS," proceed to the engine replacement procedure on page 17.
    - If the inspection result is "RETEST" with an error code, see Adapter Error Code chart in Appendix 3 on page 35 for corrective action then repeat the inspection procedure starting from step 9.



20. Select "Finish" to complete the engine noise inspection. Ensure the KDS is connected to the internet and the "Special Inspection" KDS application is open to automatically submit the results to the Kia Server. To save and/or print the results as PDF, select "Print".

    If the KDS is not connected to the internet, up to five (5) results will stay pending in the queue until the KDS is connected to the internet with the "Special Inspection" application open.

    Note: The five (5) pending results must be submitted before a sixth (6th) test can be conducted.



21. Disconnect the engine noise tester from the KDS and carefully remove the adapter (B) from the dipstick tube by grasping the engine noise tester adapter.

KS Extension Harness Installation Procedure:

NOTE: Photos below are from a 15MY Optima (QF). Components and their location may vary in different models.

1. Inspect the ECU harness (A) and verify if the Knock Sensor wiring extension harness (B) has previously been installed.

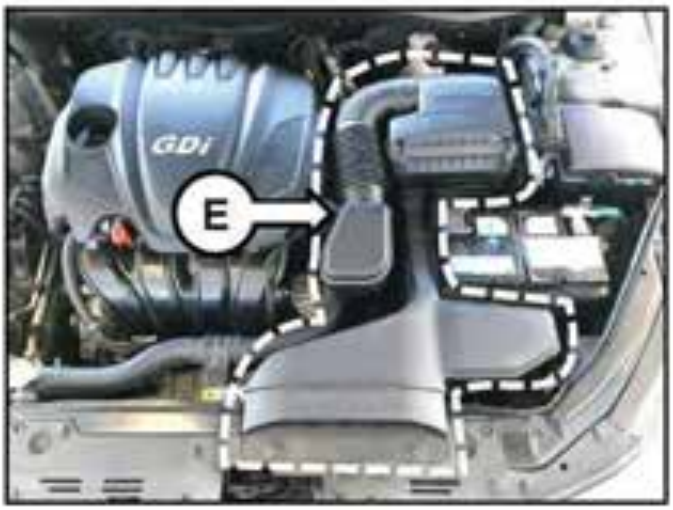
   NOTE: To identify the extension harness (B), look for an external harness (B) which should be cable-tied to the existing wiring harness (A) leading by the intake manifold (C) to the knock sensor (D), as shown.

   - If the extension harness (B) has been installed, open a Techline case online.
   - If the extension harness (B) has not been installed, proceed to the next step.





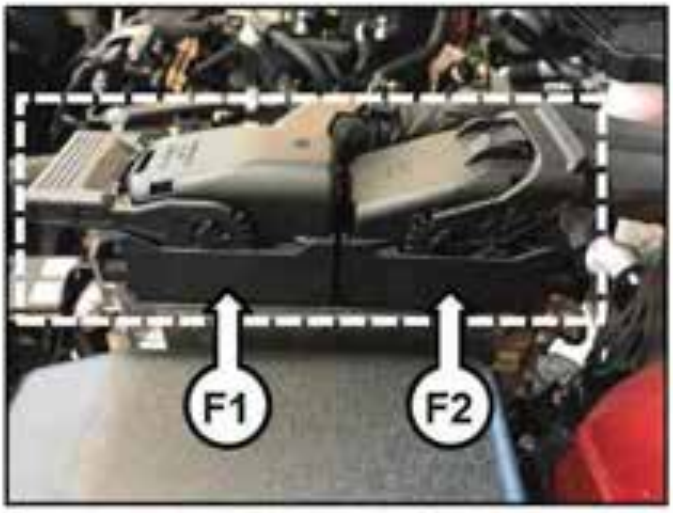
2. Remove the air cleaner and duct assembly (E).



3. Disconnect the ECU connector* (figure F1 **or** F2) (*see IMPORTANT note below).

*** IMPORTANT**

Location of the ECU connector may vary from model to model. Refer to the table on page 13 for the ECU connector number and the applicable ETM Manual on KGIS for the location of the ECU connector.

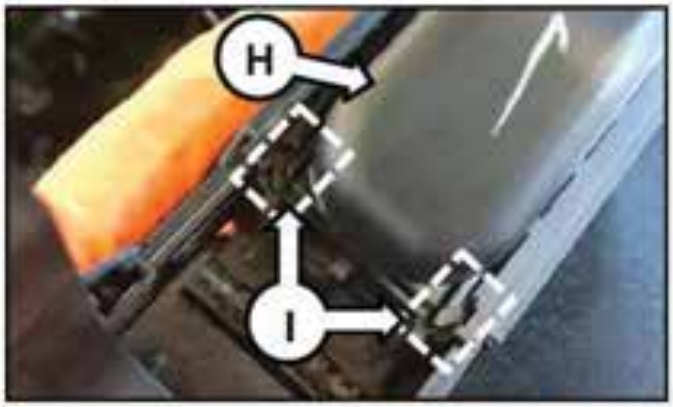


MY	Model	Engine	ECU Connector Number
2011-2013	TF	2.4	CHG-BG
		2.0T	CHTG-BG
2014	QF	2.4	C200-B
		2.0T	C100-B
2011-2013	SL	2.0T	CHTG-BG
2012-2013	XMa	2.4	CHGG-B
2014			C300-B

4. Cut the existing cable-tie (G) from the connector.



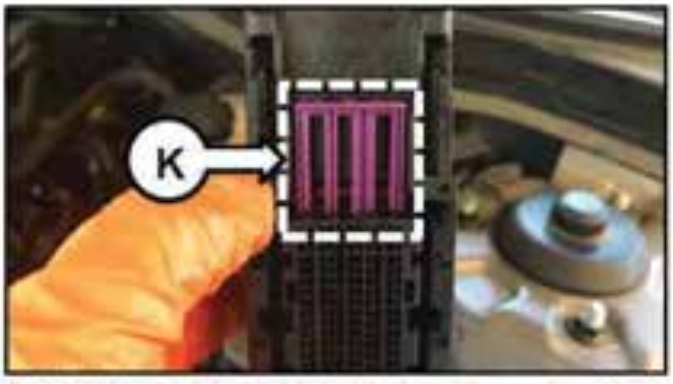
5. Remove the ECU connector cover (H) by carefully unclipping the two (2) tabs (I) and sliding the cover (H) towards the tabs (I).



6. Carefully remove the electrical tape (J) to expose the harness wires.



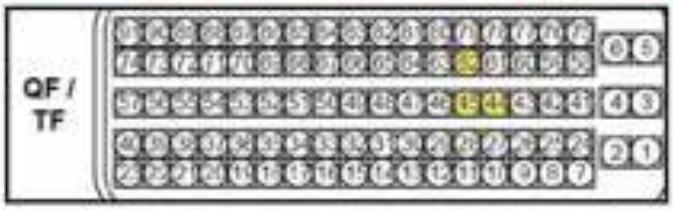
7. Remove the pin retainer (K).

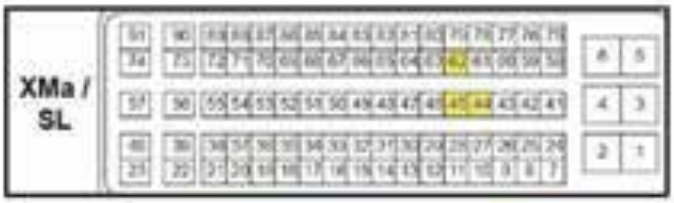


8. Locate the three (3) knock sensor circuit terminals from the ECU connector. Refer to the "Schematic Diagrams → Engine Electrical System → Engine Control System → Schematic Diagrams" chapter of the applicable ETM on KGIS.

   44. Knock Sensor Shielded Ground
   45. Knock Sensor Ground
   62. Knock Sensor Interface (Signal)

   Click here to see a video of terminal removal.





9. Remove the three (3) terminals **one at a time** and insert the new terminals of the extension harness into the ECU connector (F). Reinstall pin retainer (K) and reassemble the connector (F).

Pin	Extension Wire Color
44	Blue
45	Black
62	Red

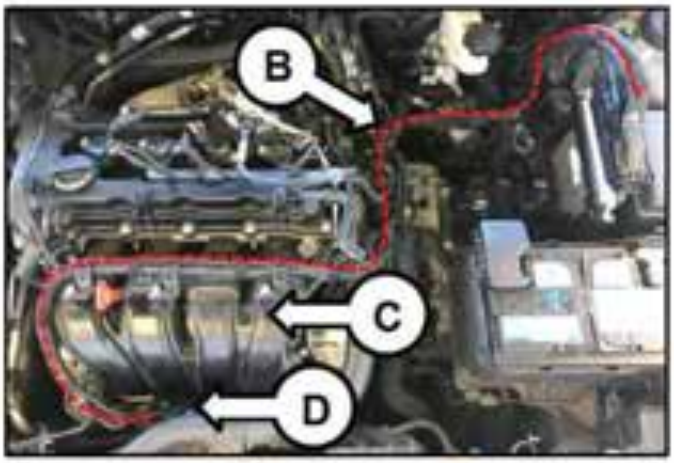
NOTE: Be sure to note the rotational position of the terminals during removal. They are directional and need to be reinstalled in the same "clock" position.



10. Route the extension harness (B) along the existing harness (A) leading by the intake manifold (C) to the knock sensor (D), **exactly** as shown.

*** IMPORTANT**

The harness (B) must be routed exactly as shown to prevent related DTCs.



*** IMPORTANT**

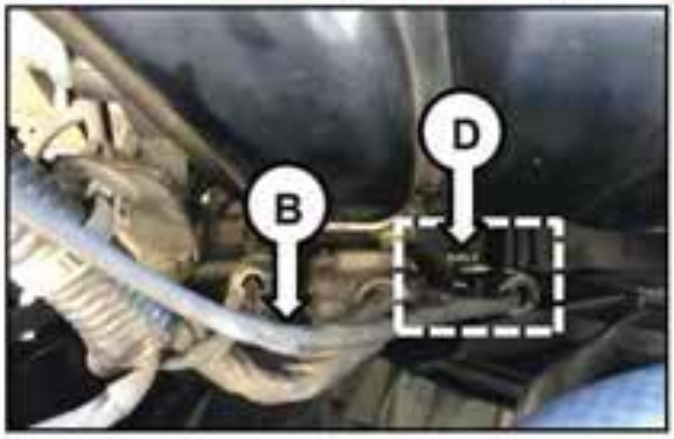
The harness (B) must be routed above and secured to the harness protector (L1) and UNDER the Breather Hose (L2) and Camshaft Position Sensor (L3).





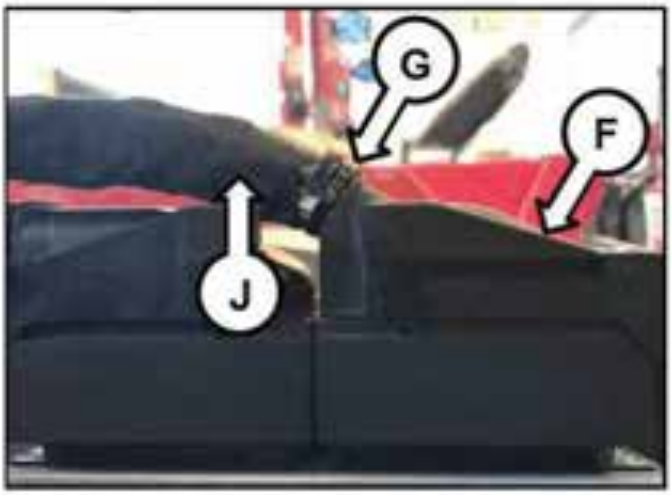


11. Connect the extension harness (B) to the knock sensor (D).

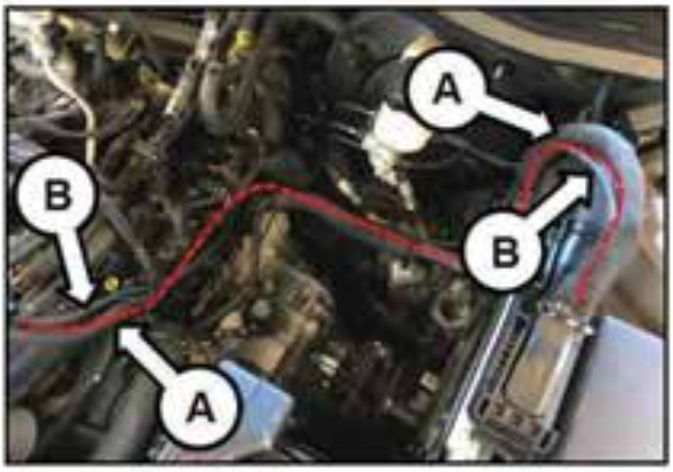


12. Cut off and discard the three (3) old knock sensor circuit terminals and the old knock sensor connector and secure the remaining wires to the new extension harness using the supplied electrical tape. **NOTE**: Complete removal of the old knock sensor wires is not necessary. Only remove the old terminals and connector.

13. Secure the extension harness at the connector (F) by replacing the cable-tie (G) removed in step 4 with a new supplied cable-tie and the electrical tape (J) removed in step 6 with new supplied electrical tape.



14. Secure the extension harness (B) to the existing harness (A) using the supplied cable-ties. Tuck and secure any excess wiring of the extension harness near the ECU with cable-tie.



15. Reinstall all removed components in the reverse order of removal.

16. Erase the P1326 DTC with the KDS and start the engine to confirm proper operation.

SUBJECT: ENGINE REPLACEMENT INSTRUCTIONS FOR DTC P1326 (PI1803W/X)

Engine Replacement Procedure:

1. Remove the engine assembly by referring to the "Engine And Transmission (Transaxle) Assembly → Engine And Transmission (Transaxle) Assembly → Repair procedures" chapter in the applicable Shop Manual on KGIS.

   Refer to TSB ENG190 for information regarding engine replacement practices.



2. After removal of the engine from the vehicle, remove all components that will need to be transferred by referring to the applicable Shop Manual on KGIS.

3. Place the new engine block on an engine stand.

4. Install all removed components from the old engine block onto the new engine block utilizing all parts from Service Kit I and II. Be advised of notes below.

Tightening torque for Knock Sensor:
13.7 – 17.4 lb.ft (18.6 – 23.5 N.m, 1.9 – 2.4 kgf.m)

Notes:

High Pressure Pump & Roller Tappet:

- Refer to TSB ENG083 for special attention and handling procedures of GDI-specific components.
- When installing the high pressure pump and roller tappet onto the new engine, apply engine oil to the roller tappet, and O-rings of the high pressure pump.



Tightening torques of pump bolts:
9.4 – 10.9 lb.ft (12.8 – 14.7 N.m, 1.3 – 1.5 kgf.m)

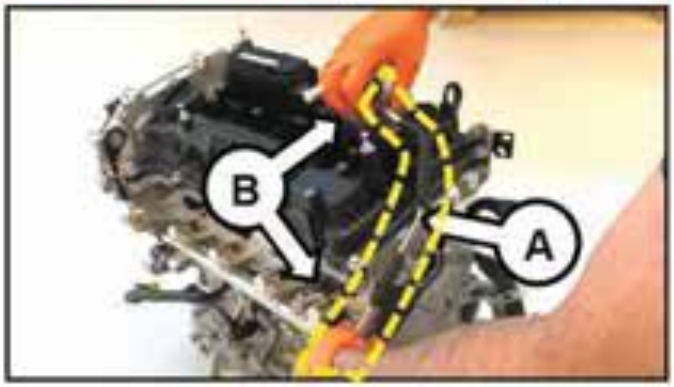
Tightening torques of pipe flare nut:
19.5 – 23.9 lb.ft (26.5 – 32.4 N.m, 2.7 – 3.3 kgf.m)

*** NOTICE**

Refer to TSB ENG083 for gasoline direct injection (GDI) specific information, including related warnings and cautions for handling high fuel pressure system components.

High Pressure Fuel Pipe:

1. Properly position the new fuel pipe (A) and then hand-tighten both flare nuts (B).



2. Install the pipe retaining bracket and bolt (C) and torque to specifications.

★ NOTICE

If the bracket and bolt are missing, order and install a new bracket and bolt.

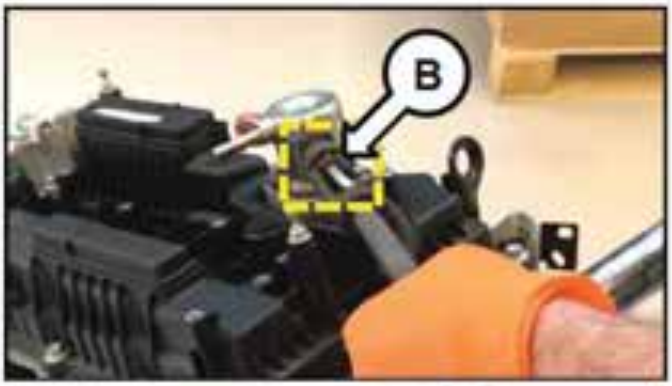
Tightening torque (bracket bolt):
5.8 – 8.7 lb.ft (7.8 –11.8 N.m, 0.8 – 1.2 kgf.m)

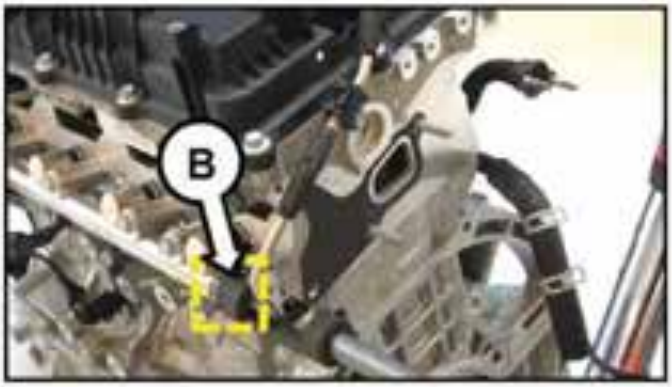


3. Using a click-type/electronic torque wrench and SST 09314-3Q100, torque both flare nuts (B) to specifications.

Tightening torque (flare nuts):
19.5 – 23.9 lb.ft (26.5 – 32.4 N.m, 2.7 – 3.3 kgf.m)

Click here to see a video tutorial of high pressure fuel pipe install (includes high pressure pump install).



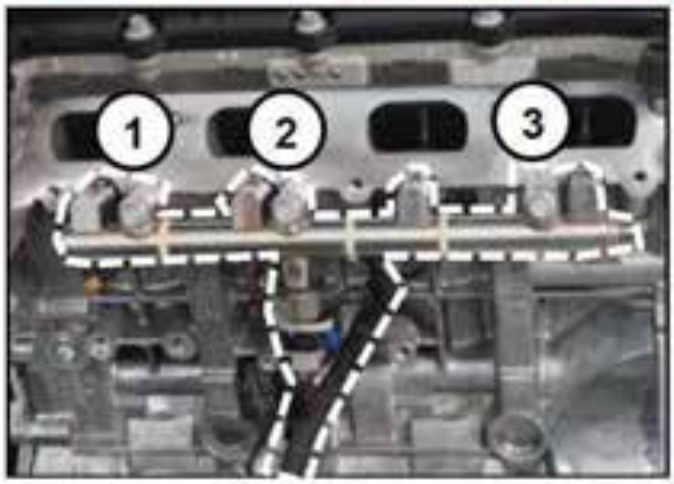


★ IMPORTANT

The high pressure fuel pipe bracket and bolt must be installed and properly torqued prior to torqueing the high pressure fuel pipe flare nuts.

Delivery Pipe:

- Refer to TSB ENG083 for special attention and handling procedures of GDI-specific components.
- Prior to installing the delivery pipe, be sure to replace all of the injector O-rings and injector retainers.
- Prior to installing the delivery pipe, apply engine oil to the injector O-rings.
- When installing the delivery pipe, use caution not to damage the tip of the injector.
- Be sure to replace the delivery pipe retaining bolts and torque them in the sequence shown.



Tightening torque of bolts:
13.7 – 17.4 lb.ft (18.6 – 23.5 N.m, 1.9 – 2.4 kgf.m)

*** NOTICE**

Combustion seals must be compressed after installation and before attempting to install into the cylinder head. Use SST 09353 2B000 (refer to TSB ENG083).

Dipstick Tube & Dipstick:

- Prior to installing the new tube, lubricate the o-ring located at the bottom of the tube with engine oil.
- Install the red dipstick included in Service Kit I.



Tightening torque of bolt:
5.8 – 8.7 lb.ft (7.8 – 11.8 N.m, 0.8 - 1.2 kgf.m)

Intake Manifold:

- Prior to installation, replace the intake manifold gaskets.
- Torque bolts in the sequence shown.



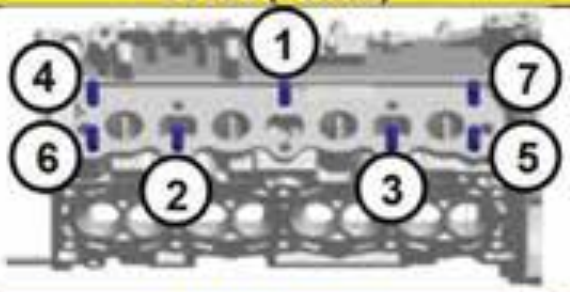
Tightening torque of bolts:
13.7 – 17.4 lb.ft (18.6 – 23.5 N.m, 1.9 – 2.4 kgf.m)

Exhaust Manifold:

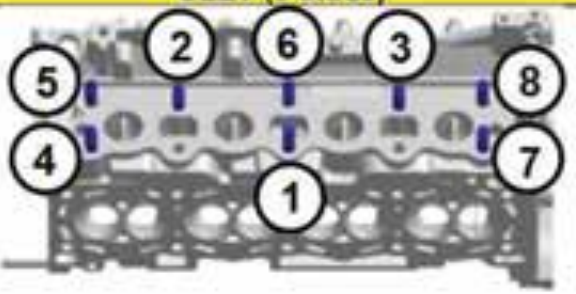
- All engines supplied under this Product Improvement Campaign have the exhaust manifold studs configured for SULEV engines.
- Using the pictures to the right, check the exhaust manifold stud location and quantity. Relocate as required for ULEV engines and obtain one (1) extra from the removed engine.
- Prior to installation, replace the exhaust manifold gasket and front muffler gasket.
- Torque nuts in the sequence shown.

Tightening torque of nuts:
36.2 – 39.7 lb.ft (49.0 – 53.9 N.m, 5.0 – 5.5 kgf.m)

SULEV (7 studs)



ULEV (8 studs)



***For 14MY Sorento (XMa) vehicles only: check the underhood emissions label and record whether the label references ULEV or SULEV. This information is needed to select/order the correct replacement engine.**


KIA MOTORS CORPORATION
VEHICLE EMISSION CONTROL INFORMATION

Conforms to regulations : 2014 MY

U.S.EPA : T2B5 LDV OBD : CA II Fuel : Gasoline

California : ULEV PC OBD : CA II Fuel : Gasoline

Engine : EXMXV02.44PE DFEH0250(2)WL-TWC/TWC

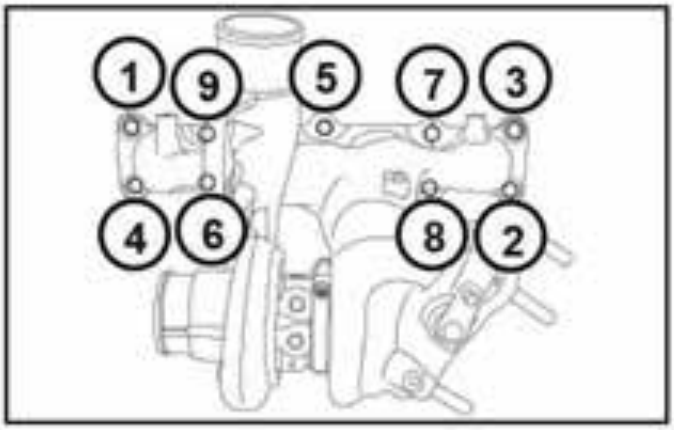
Evap. : EXMXR0130DRE No adjustments needed. A402

[WARNING] 35417-2G4E3

Loaded I/M testing of permanent four-wheel drive or traction control-equipped vehicles must be conducted on a four-wheel drive speed synchronized dynamometer. Otherwise, a non-loaded test procedure must be performed.

- On Turbo engines, replace the turbocharger oil feed line and gaskets.

Tightening torque of oil feed line bolt:
8.7 – 13.0 lb.ft (11.8 – 17.7 N.m, 1.2 – 1.8 kgf.m)
Tightening torque of oil feed line nuts:
5.8 – 8.7 lb.ft (7.8 – 11.8 N.m, 0.8 – 1.2 kgf.m)
Tightening torque of oil drain line nuts and bolts:
5.8 – 8.7 lb.ft (7.8 – 11.8 N.m, 0.8 – 1.2 kgf.m)



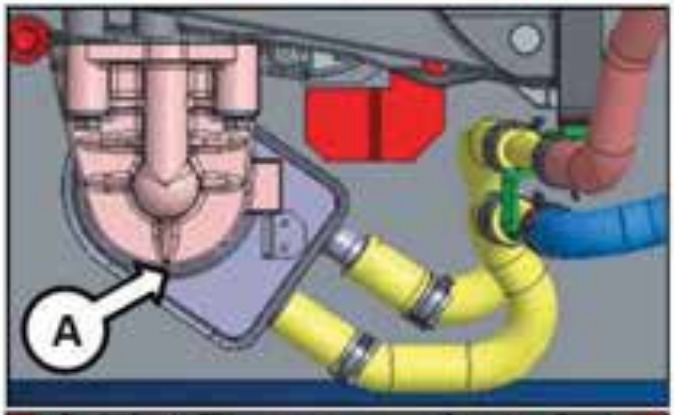
- Torque exhaust manifold nuts in the sequence shown.

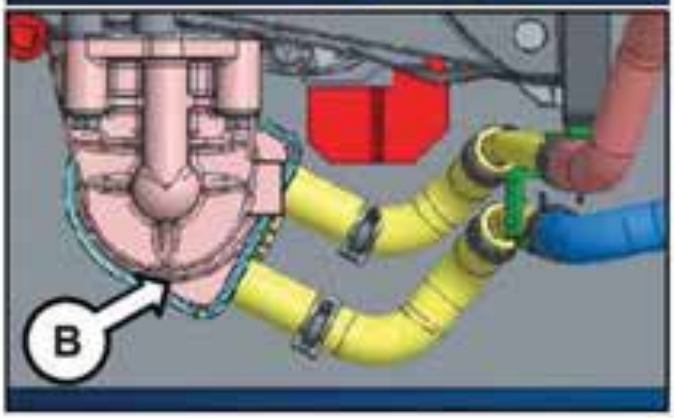
Tightening torque of nuts:
36.2 – 39.7 lb.ft (49.0 – 53.9 N.m, 5.0 – 5.5 kgf.m)

Oil Cooler Tube Assembly:

New engines may be supplied with a different oil cooler. Use steps below to determine the need for a replacement oil cooler tube assembly.

- If the new engine's (bigger) oil cooler (A) does not match the old engine's (smaller) oil cooler (B), replace the oil cooler tube assembly with the improved part. See parts table on page 23.
- If the new engine's (bigger) oil cooler (A) matches the old engine's (bigger) oil cooler (A), reuse the old engine's oil cooler tube assembly.
- If the new engine's (smaller) oil cooler (B) matches the old engine's (smaller) oil cooler (B), reuse the old engine's oil cooler tube assembly.





Drive Plate / Flywheel Bolts:

- Replace all seven (7) drive plate (AT) or flywheel (MT) bolts.

Tightening torque of nuts:
86.8 – 93.9 lb.ft (117.7 – 125.5 N.m, 12.0 – 13.0 kgf.m)



Drive Plate Bolt (A/T)



Flywheel Bolt (M/T)

Torque Converter

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



Not Fully Inserted



Fully Inserted

5. Reinstall the assembled engine and transmission/transaxle into the vehicle.

   Be sure to:

   - Fill crankcase with 5W-30 oil (~5.8 quarts).
   - Fill and bleed the cooling system with 50/50 coolant or mixture appropriate for area.
   - Pressurize the fuel system before starting the vehicle.
   - Reset engine adaptive values and perform steering angle sensor calibration.

   Refer to TSB ENG190 for information regarding engine replacement practices.

6. Verify proper operation of the vehicle with road test, and **with the engine ON (running), erase any stored DTCs** (e.g., EPS, ESC, and TPMS) that may have been set by this procedure. Verify no leaks exist and ensure engine oil and coolant are at their proper level.

   If any DTCs are still active, follow any related diagnosis and repair as needed.

SUBJECT: ENGINE REPLACEMENT INSTRUCTIONS FOR DTC P1326 (PI1803W/X)

AFFECTED VEHICLE RANGE:

Model	Production Date Range
11-13MY Optima (QF/TF)	August 12, 2010 through September 27, 2013
14MY Optima (QF)	August 28, 2013 through May 15, 2014
12-14MY Sorento (XMa)	April 19, 2011 through February 10, 2014
11-13MY Sportage (SL)	December 30, 2010 through August 30, 2013

REQUIRED TOOL:

Tool Name	Tool Part No.	Figure	Comments
Torque Wrench Socket	09314 3Q100		Refer to TSB ENG083 for detailed usage instructions
Injector Combustion Seal Ring Installer	09353 2B000		
Pin Tool	91400 00000QQK		Auto-shipped to Dealers in 10/2018. Replacements can be ordered through Mobis Parts America.
Click-Type or Electronic Torque Wrench	N/A		Locally Sourced
Engine Noise Tester SST	GIT1XTDCP005		Auto-shipped to Dealers in June 2017 for SC147 For replacements, contact Snap-On Business Solutions at (888) 542-1011.

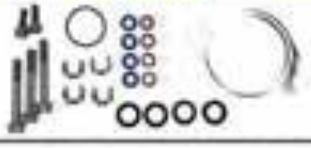
REQUIRED PARTS:

Part Name	MY	Model	Part Number		Figure
			2.4GDI	2.0T-GDI	
Engine Long Block	2011-2013	QF, TF	21101 2GK05QQKR	21101 2GK07QQKR	
		SL	-	21101 2GK07QQKR	
	2012-2013	XMa	21101 2GK09QQKR	-	
	2014	QF	21101 2GK06QQKR	21101 2GK08QQKR	
		XMa ULEV*	21101 2GK11QQKR	-	
		XMA SULEV*	21101 2GK11QQKR	-	

*See page 19 for details about underhood label check.

Part Name	Engine	Part Number	Figure
Service Kit I	2.4GDI	21111 2GK50QQK	
	2.0T-GDI	21111 2GK60QQK	

SUBJECT: ENGINE REPLACEMENT INSTRUCTIONS FOR DTC P1326 (PI1803W/X)

Part Name	Engine	Part Number	Figure
Service Kit II	2.4GDI and 2.0T-GDI	21111 2GK70QQK	
Drive Plate Bolts	2.4GDI and 2.0T-GDI	23311 25050	
		23231 25200 (MT)	
Oil Cooler Tube Assembly (replacement is conditional, refer to page 20)	2.4GDI	25470 2G050QQK	
	2.0T-GDI	25470 2G650QQK	
KS Extension Harness	2.4GDI and 2.0T-GDI	*91400 2T100QQK	

*NOTE: Old part number 91400 2T000QQK has been superseded by new part number 91400 2T100QQK.

WARRANTY INFORMATION (PI1803**W1**, MIL ON WITH P1326):

N Code: N99 C Code: C99

Model	Claim Type	Causal P/N	Qty.	Repair Description	Labor Op Code	Op Time	Replacement P/N	Qty.
Opt. (QF) 2.4L	R	23060 2G400	0	(PI1803W1) 2.4L GDI MIL ON with P1326, KSDS Wire Harness Inspection Pass, Engine Noise Inspection Pass, & KSDS Extension Harness Install	180A23R8	1.1 M/H	*91400 2T100QQK	1
				(PI1803W1) 2.4L GDI MIL ON with P1326, KSDS Wire Harness Inspection Pass, Engine Noise Inspection Fail, & Engine Replacement	180A23R0	8.7 M/H	21111 2GK50QQK	1
							21111 2GK70QQK	1
							(AT) 23311 25050	7
							(MT) 23231 25200	
							(11~13MY) 21101 2GK05QQKR	1
							(14MY) 21101 2GK06QQKR	
				(PI1803W1) 2.4L GDI MIL ON with P1326, KSDS Wire Harness Inspection Fail, KSDS Extension Harness Install	180A23R1	0.8 M/H	*91400 2T100QQK	1

*NOTE: Old part number 91400 2T000QQK has been superseded by new part number 91400 2T100QQK.

SUBJECT: ENGINE REPLACEMENT INSTRUCTIONS FOR DTC P1326 (PI1803W/X)

Model	Claim Type	Causal P/N	Qty.	Repair Description	Labor Op Code	Op Time	Replacement P/N	Qty.
Opt. (QF) 2.0L T	R	23060 2G400	0	(PI1803W1) 2.0L T-GDI MIL ON with P1326, KSDS Wire Harness Inspection Pass, Engine Noise Inspection Pass, & KSDS Extension Harness Install	180A23R9	1.1 M/H	*91400 2T100QQK	1
				(PI1803W1) 2.0L T-GDI MIL ON with P1326, KSDS Wire Harness Inspection Pass, Engine Noise Inspection Fail, & Engine Replacement	180A23R2	8.9 M/H	21111 2GK60QQK	1
							21111 2GK70QQK	1
							(AT) 23311 25050	7
							(MT) 23231 25200	
							(11-13MY) 21101 2GK07QQKR	1
							(14MY) 21101 2GK06QQKR	
				(PI1803W1) 2.0L T-GDI MIL ON with P1326, KSDS Wire Harness Inspection Fail, KSDS Extension Harness Install	180A23R3	0.8 M/H	*91400 2T100QQK	1
Opt. (TF) 2.4L	R	23060 2G400	0	(PI1803W1) 2.4L GDI MIL ON with P1326, KSDS Wire Harness Inspection Pass, Engine Noise Inspection Pass, & KSDS Extension Harness Install	180142RK	1.1 M/H	*91400 2T100QQK	1
				(PI1803W1) 2.4L GDI MIL ON with P1326, KSDS Wire Harness Inspection Pass, Engine Noise Inspection Fail, & Engine Replacement	180142R0	8.7 M/H	21111 2GK50QQK	1
							21111 2GK70QQK	1
							(AT) 23311 25050	7
							(MT) 23231 25200	
							21101 2GK05QQKR	1
				(PI1803W1) 2.4L GDI MIL ON with P1326, KSDS Wire Harness Inspection Fail, KSDS Extension Harness Install	180142R5	0.8 M/H	*91400 2T100QQK	1
Opt. (TF) 2.0L T	R	23060 2G400	0	(PI1803W1) 2.0L T-GDI MIL ON with P1326, KSDS Wire Harness Inspection Pass, Engine Noise Inspection Pass, & KSDS Extension Harness Install	180142RN	1.1 M/H	*91400 2T100QQK	1
				(PI1803W1) 2.0L T-GDI MIL ON with P1326, KSDS Wire Harness Inspection Pass, Engine Noise Inspection Fail, & Engine Replacement	180142R3	8.7 M/H	21111 2GK60QQK	1
							21111 2GK70QQK	1
							(AT) 23311 25050	7
							(MT) 23231 25200	
							21101 2GK07QQKR	1
				(PI1803W1) 2.0L T-GDI MIL ON with P1326, KSDS Wire Harness Inspection Fail, KSDS Extension Harness Install	180142R8	0.8 M/H	*91400 2T100QQK	1

*NOTE: Old part number 91400 2T000QQK has been superseded by new part number 91400 2T100QQK.

SUBJECT: ENGINE REPLACEMENT INSTRUCTIONS FOR DTC P1326 (PI1803W/X)

Model	Claim Type	Causal P/N	Qty.	Repair Description	Labor Op Code	Op Time	Replacement P/N	Qty.
Sor. (XMa) 2.4L	R	21020 2G010	0	(PI1803**W1**) 2.4L GDI 2WD MIL ON with P1326, KSDS Wire Harness Inspection Pass, Engine Noise Inspection Pass, & KSDS Extension Harness Install	180A24R8	1.1 M/H	*91400 2T100QQK	1
				(PI1803**W1**) 2.4L GDI 2WD MIL ON with P1326, KSDS Wire Harness Inspection Pass, Engine Noise Inspection Fail, & Engine Replacement	180A24R0	8.7 M/H	21111 2GK50QQK	1
							21111 2GK70QQK	1
							(AT) 23311 25050	7
							(MT) 23231 25200	
							(12-13MY) 21101 2GK09QQKR	1
							(14MY ULEV) 21101 2GK11QQKR	
							(14MY ULEV or SULEV) 21101 2GK11QQKR	
				(PI1803**W1**) 2.4L GDI 2WD MIL ON with P1326, KSDS Wire Harness Inspection Fail, KSDS Extension Harness Install	180A24R1	0.8 M/H	*91400 2T100QQK	1
				(PI1803**W1**) 2.4L GDI 4WD MIL ON with P1326, KSDS Wire Harness Inspection Pass, Engine Noise Inspection Pass, & KSDS Extension Harness Install	180A24R9	1.1 M/H	*91400 2T100QQK	1
				(PI1803**W1**) 2.4L GDI 4WD MIL ON with P1326, KSDS Wire Harness Inspection Pass, Engine Noise Inspection Fail, & Engine Replacement	180A24R2	8.9 M/H	21111 2GK50QQK	1
							21111 2GK70QQK	1
							(AT) 23311 25050	7
							(MT) 23231 25200	
							(12-13MY) 21101 2GK09QQKR	1
							(14MY ULEV) 21101 2GK11QQKR	
							(14MY ULEV or SULEV) 21101 2GK11QQKR	
				(PI1803**W1**) 2.4L GDI AWD MIL ON with P1326, KSDS Wire Harness Inspection Fail, KSDS Extension Harness Install	180A24R3	0.8 M/H	*91400 2T100QQK	1

***NOTE: Old part number 91400 2T000QQK has been superseded by new part number 91400 2T100QQK.**

SUBJECT: ENGINE REPLACEMENT INSTRUCTIONS FOR DTC P1326 (PI1803W/X)

Model	Claim Type	Causal P/N	Qty.	Repair Description	Labor Op Code	Op Time	Replacement P/N	Qty.
Spo. (SL) 2.0L T	R	23060 2G400	0	(PI1803**W1**) 2.0L T-GDI 2WD MIL ON with P1326, KSDS Wire Harness Inspection Pass, Engine Noise Inspection Pass, & KSDS Extension Harness Install	180143RN	1.2 M/H	*91400 2T100QQK	1
				(PI1803**W1**) 2.0L T-GDI 2WD MIL ON with P1326, KSDS Wire Harness Inspection Pass, Engine Noise Inspection Fail, & Engine Replacement	180143R3	8.0 M/H	21111 2GK60QQK	1
							21111 2GK70QQK	1
							(AT) 23311 25050	7
							(MT) 23231 25200	
							21101 2GK07QQKR	1
				(PI1803**W1**) 2.0L T-GDI 2WD MIL ON with P1326, KSDS Wire Harness Inspection Fail, KSDS Extension Harness Install	180143R8	0.9 M/H	*91400 2T100QQK	1
				(PI1803**W1**) 2.0L T-GDI 4WD MIL ON with P1326, KSDS Wire Harness Inspection Pass, Engine Noise Inspection Pass, & KSDS Extension Harness Install	180143RO	1.2 M/H	*91400 2T100QQK	1
				(PI1803**W1**) 2.0L T-GDI 4WD MIL ON with P1326, KSDS Wire Harness Inspection Pass, Engine Noise Inspection Fail, & Engine Replacement	180143R4	8.4 M/H	21111 2GK60QQK	1
							21111 2GK70QQK	1
							(AT) 23311 25050	7
							(MT) 23231 25200	
							21101 2GK07QQKR	1
				(PI1803**W1**) 2.0L T-GDI 4WD MIL ON with P1326, KSDS Wire Harness Inspection Fail, KSDS Extension Harness Install	180143R9	0.9 M/H	*91400 2T100QQK	1

*NOTE: Old part number 91400 2T000QQK has been superseded by new part number 91400 2T100QQK.

SUBJECT: ENGINE REPLACEMENT INSTRUCTIONS FOR DTC P1326 (PI1803W/X)

WARRANTY INFORMATION (PI1803X1, ENGINE SEIZED/SEVERE KNOCKING):
N Code: N99 C Code: C99

Model	Claim Type	Causal P/N	Qty.	Repair Description	Labor Op Code	Op Time	Replacement P/N	Qty.
Opt. (QF) 2.4L	R	23060 2G400	0	(PI1803X1) 2.4L GDI Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Pass	180A23R4	8.4 M/H	21111 2GK50QGK	1
							21111 2GK70QGK	1
							(AT) 23311 25050	7
							(MT) 23231 25200	
							(11-13MY) 21101 2GK05QGKR	1
							(14MY) 21101 2GK06QGKR	
				(PI1803X1) 2.4L GDI Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Fail, KSDS Wire Harness Install	180A23R6	8.9 M/H	21111 2GK50QGK	1
							21111 2GK70QGK	1
							(AT) 23311 25050	7
							(MT) 23231 25200	
							(11-13MY) 21101 2GK05QGKR	1
							(14MY) 21101 2GK06QGKR	
							*91400 2T100QGK	1
Opt. (QF) 2.0L T	R	23060 2G400	0	(PI1803X1) 2.0L T-GDI Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Pass	180A23R5	8.7 M/H	21111 2GK60QGK	1
							21111 2GK70QGK	1
							(AT) 23311 25050	7
							(MT) 23231 25200	
							(11-13MY) 21101 2GK07QGKR	1
							(14MY) 21101 2GK08QGKR	
				(PI1803X1) 2.0L T-GDI Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Fail, KSDS Wire Harness Install	180A23R7	9.2 M/H	21111 2GK60QGK	1
							21111 2GK70QGK	1
							(AT) 23311 25050	7
							(MT) 23231 25200	
							(11-13MY) 21101 2GK07QGKR	1
							(14MY) 21101 2GK08QGKR	
							*91400 2T100QGK	1
Opt. (TF) 2.4L	R	23060 2G400	0	(PI1803X1) 2.4L GDI Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Pass	180142RA	8.4 M/H	21111 2GK50QGK	1
							21111 2GK70QGK	1
							(AT) 23311 25050	7
							(MT) 23231 25200	
							21101 2GK05QGKR	1
				(PI1803X1) 2.4L GDI Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Fail, KSDS Wire Harness Install	180142RF	8.9 M/H	21111 2GK50QGK	1
							21111 2GK70QGK	1
							(AT) 23311 25050	7
							(MT) 23231 25200	
							21101 2GK05QGKR	1
							*91400 2T100QGK	1

***NOTE: Old part number 91400 2T000QGK has been superseded by new part number 91400 2T100QGK.**

SUBJECT: ENGINE REPLACEMENT INSTRUCTIONS FOR DTC P1326 (PI1803W/X)

Model	Claim Type	Causal P/N	Qty.	Repair Description	Labor Op Code	Op Time	Replacement P/N	Qty.
Opt. (TF) 2.0L T	R	23060 2G400	0	(PI1803X1) 2.0T-GDI Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Pass	180142RD	8.7 M/H	21111 2GK60QQK	1
							21111 2GK70QQK	1
							(AT) 23311 25050	7
							(MT) 23231 25200	
							21101 2GK07QQKR	1
				(PI1803X1) 2.0T-GDI Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Fail, KSDS Wire Harness Install	180142RI	9.2 M/H	21111 2GK60QQK	1
							21111 2GK70QQK	1
							(AT) 23311 25050	7
							(MT) 23231 25200	
							21101 2GK07QQKR	1
							*91400 2T100QQK	1
Scr. (XMa) 2.4L	R	21020 2G010	0	(PI1803X1) 2.4L GDI 2WD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Pass	180A24R4	8.4 M/H	21111 2GK50QQK	1
							21111 2GK70QQK	1
							(AT) 23311 25050	7
							(MT) 23231 25200	
							(12-13MY) 21101 2GK09QQKR	1
							(14MY ULEV) 21101 2GK11QQKR	
							(14MY ULEV or SULEV) 21101 2GK11QQKR	
				(PI1803X1) 2.4L GDI 2WD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Fail, KSDS Wire Harness Install	180A24R6	8.9 M/H	21111 2GK50QQK	1
							21111 2GK70QQK	1
							(AT) 23311 25050	7
							(MT) 23231 25200	
							(12-13MY) 21101 2GK09QQKR	1
							(14MY ULEV) 21101 2GK11QQKR	
							(14MY ULEV or SULEV) 21101 2GK11QQKR	
							*91400 2T100QQK	1
				(PI1803X1) 2.4L GDI AWD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Pass	180A24R5	8.6 M/H	21111 2GK50QQK	1
							21111 2GK70QQK	1
							(AT) 23311 25050	7
							(MT) 23231 25200	
							(12-13MY) 21101 2GK09QQKR	1
							(14MY ULEV) 21101 2GK11QQKR	
							(14MY ULEV or SULEV) 21101 2GK11QQKR	
				(PI1803X1) 2.4L GDI AWD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Fail, KSDS Wire Harness Install	180A24R7	9.1 M/H	21111 2GK50QQK	1
							21111 2GK70QQK	1
							(AT) 23311 25050	7
							(MT) 23231 25200	
							(12-13MY) 21101 2GK09QQKR	1
							(14MY ULEV) 21101 2GK11QQKR	
							(14MY ULEV or SULEV) 21101 2GK11QQKR	
							*91400 2T100QQK	1

*NOTE: Old part number 91400 2T000QQK has been superseded by new part number 91400 2T100QQK.

SUBJECT: ENGINE REPLACEMENT INSTRUCTIONS FOR DTC P1326 (PI1803W/X)

Model	Claim Type	Causal P/N	Qty.	Repair Description	Labor Op Code	Op Time	Replacement P/N	Qty.
Spo. (SL) 2.0L T	R	23060 2G400	0	(PI1803X1) 2.0L T-GDI 2WD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Pass	180143RD	7.7 M/H	21111 2GK60QQK	1
							21111 2GK70QQK	1
							(AT) 23311 25050	7
							(MT) 23231 25200	
							21101 2GK07QQKR	1
				(PI1803X1) 2.0L T-GDI 2WD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Fail, KSDS Wire Harness Install	180143RI	8.3 M/H	21111 2GK60QQK	1
							21111 2GK70QQK	1
							(AT) 23311 25050	7
							(MT) 23231 25200	
							21101 2GK07QQKR	1
							*91400 2T100QQK	1
				(PI1803X1) 2.0L T-GDI AWD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Pass	180143RE	8.1 M/H	21111 2GK60QQK	1
							21111 2GK70QQK	1
							(AT) 23311 25050	7
							(MT) 23231 25200	
							21101 2GK07QQKR	1
				(PI1803X1) 2.0L T-GDI AWD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Fail, KSDS Wire Harness Install	180143RJ	8.7 M/H	21111 2GK60QQK	1
							21111 2GK70QQK	1
							(AT) 23311 25050	7
							(MT) 23231 25200	
							21101 2GK07QQKR	1
							*91400 2T100QQK	1

NOTE: Refer to Warranty Bulletin 2018-14 for details regarding coolant and substitute transportation reimbursement requirements.

***Old part number 91400 2T000QQK has been superseded by new part number 91400 2T100QQK.**

Use sublet code 'X3' with a maximum allowed amount of $19.80 for "ENGINE R&R" engine oil reimbursement.

If the replacement of the Oil Cooler Tube Assembly was required, please manually enter the applicable Oil Cooler Tube Assembly part number to the claim's related parts section.

Dispose of old parts in accordance with local, state, and Federal regulations.

★ NOTICE

VIN inquiry data for this repair is provided for tracking purposes only. Kia retailers should reference PI1803W/X* when accessing the WebDCS system.

Appendix 1 (Warranty Claim Authorization)

	Scenario	Description	Action Required
1	Campaign - TSB # PI1803W/X Case for Warranty Authorization **NO INSPECTION**	Wiring Signal Interference Check cannot be completed due to engine seizure or other engine failure (won't run long enough to complete the test)	**TL PWA required for all dealers – Video of condition and WRTY143 form required*** Video requirement examples below are for illustration purposes, individual requirements will vary based upon the condition reported: • Video should be continuous and show the VIN (most convenient VIN plate) and pan to show the engine condition • For engine seizures, attempt to turn over engine with breaker bar in video • For hole in engine block, show hole in video

Appendix 2 (Video Capture & Upload)

Capturing a video is often helpful in assisting the Kia Techline Agent in determining a proper diagnosis strategy. Once a TechLine case is open, the following procedure will guide you through the video capture and upload.

The Chrome™ browser should be used to access the Techline portal. Follow the steps below to clear the default browser if it is other than Chrome™.

For KDS Tab 10.1 Tablets:

1. Select "Settings" from the App Screen.
2. Select the "General" tab at the top.
3. Select "Default Applications".
4. If "Internet" is the default browser, select the CLEAR button.

   If "Chrome" is the default browser, further action is not required.



5. When opening the Techline portal, select "Chrome" and select Always".



For KDS Tab S2 Tablets:

1. Select "Settings" from the App Screen.
2. Select "Applications".
3. Select "Default Applications".



4. Select "Browser app".



5. Ensure "Chrome" is selected.



Setting Your Video Size to "Limit to Email"

1. Select "Camera" from the App Screen.



2. Select the Settings icon.



3. Select the Video Camera icon.



4. Ensure "Limit to email" is selected.



Attaching Video to a Techline Case

1. Open K-Support in the device Chrome™ browser or select the "Techline" button on KDS home page.

   https://ksupport.kiausa.com



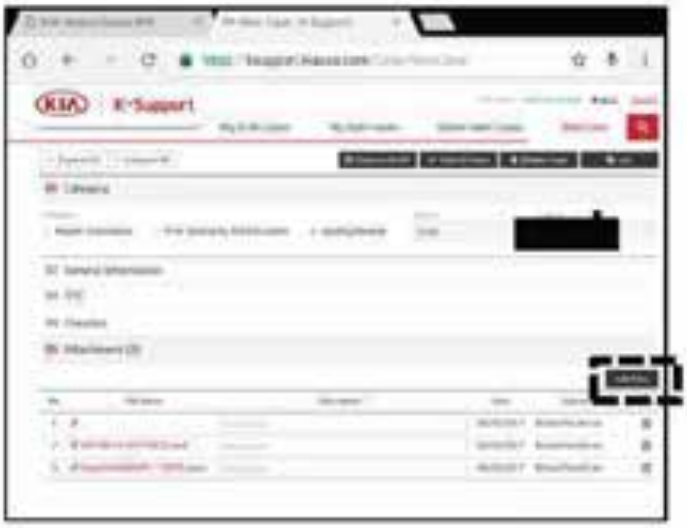
2. Open your existing Techline case for the vehicle requiring a video capture by selecting the case number.



3. Select "Attachment".



4. Select "Add Files".



5. Select "Camcorder" and the video camera will open.



6. Start by recording the VIN. Ensure sun glare is not reflecting off windows or other objects.

   Without stopping the recording, capture the area of the vehicle displaying the issue. i.e.;

   - Engine Noise – record the engine.
   - Hole In Block – record the side of the engine with the damage.
   - Seized Engine – record a technician trying to turn the engine over with a breaker bar.



*** NOTICE**

NOTE: Ensure the video size is set to "Limit to email" (see page 32). <u>Only record the VIN and the engine exhibiting the concern.</u> Any additional information will increase the size of the video and make it difficult to upload or download.

7. Stop the video when you captured what is needed. Select "OK" to use this capture or "RETRY" to capture the video again.

8. Ensure a description of the recording. For example, engine knock or smoke from exhaust.

9. Select "Submit Case".



10. Select "Yes" when the confirmation message below appears.

    Note: Selecting anything other than "Yes" will not save the video capture.



Appendix 3 (Engine Noise Adapter Threshold)

Code	Concern	Action
RETEST Code 001	Any measured value out of range / below lower limit	Contact GIT America
RETEST Code 002	Any measured value out of range / over upper limit	Contact GIT America
RETEST Code 003	Difference between minimum and maximum of 2000 RPM or Idle RPM measured value out of range	Perform Retest three (3) more times. If Error Code 003 still displays after the third attempt, contact GIT America.
RETEST Code 004	Difference between minimum and maximum of 2000 RPM and Idle RPM measured value out of range	Perform Retest three (3) more times. If Error Code 004 still displays after the third attempt, contact GIT America.
RETEST Code 005	The adapter/extension cable is unplugged or damaged after test started	Perform Retest three (3) more times. If Error Code 005 still displays after the third attempt, contact GIT America.

GIT America can be contacted at (888) 542-4371.

PE19-004

KIA

TAB 77_PI180 WX_TSB_R4 - submitted on line

	GROUP	MODEL
KIA	**Product Improvement**	**See Model List on Page 1**
	NUMBER	DATE
	PI1803W/X (Rev 4, 04/10/2019)	**November 2018**

PRODUCT IMPROVEMENT CAMPAIGN

SUBJECT: ENGINE REPLACEMENT INSTRUCTIONS FOR DTC P1326 (PI1803W/X)

★ NOTICE

This bulletin has been revised to include additional information. New/revised sections of this bulletin are indicated by a black bar in the margin area.

This bulletin provides information related to the Technical Service Bulletin previously published in November 2018 (PI1803, Rev 1, 01/02/2018) titled "Knock Sensor Detection System - ECU Logic Improvement". Specifically, this bulletin provides instructions on which procedures to follow if, after installation of the KSDS, any one of the subject vehicles below returns to the dealer with Diagnostic Trouble Code ("DTC"), P1326.

Year	Model	Engine	Production Date
2011-2013	Optima (QF/TF)	2.4L & 2.0L T-GDI	8/12/10 – 9/27/13
2014	Optima (QF)	2.4L & 2.0L T-GDI	8/28/13 – 5/15/14
2011-2013	Sportage (SL)	2.0L T-GDI	12/30/10 – 8/30/13
2012-2014	Sorento (XMa)	2.4L GDI	4/19/11 – 2/10/14

If DTC P1326 is present, first check for any wiring signal interference following the procedure set forth below before determining whether an engine replacement is necessary. Based on the results of the Wiring Signal Interference Check, dealers are to perform either the Knock Sensor Wiring Repair or, if the engine noise inspection result confirms it, the Engine Long-Block Replacement, according to the procedures in this TSB.

If the vehicle's engine is already seized or severely knocking, dealers are to perform the Engine Long-Block Replacement **and** the Wiring Signal Interference Check according to the procedures in this TSB.

A Vehicle Diagnosis Number (VDN) must be created with DTC P1326, prior to performing PI1803W/X. If a VDN is not created, Warranty claim submission issues may occur.

Before conducting the procedure, verify the vehicle is included in the list of affected VINs.

★ NOTICE

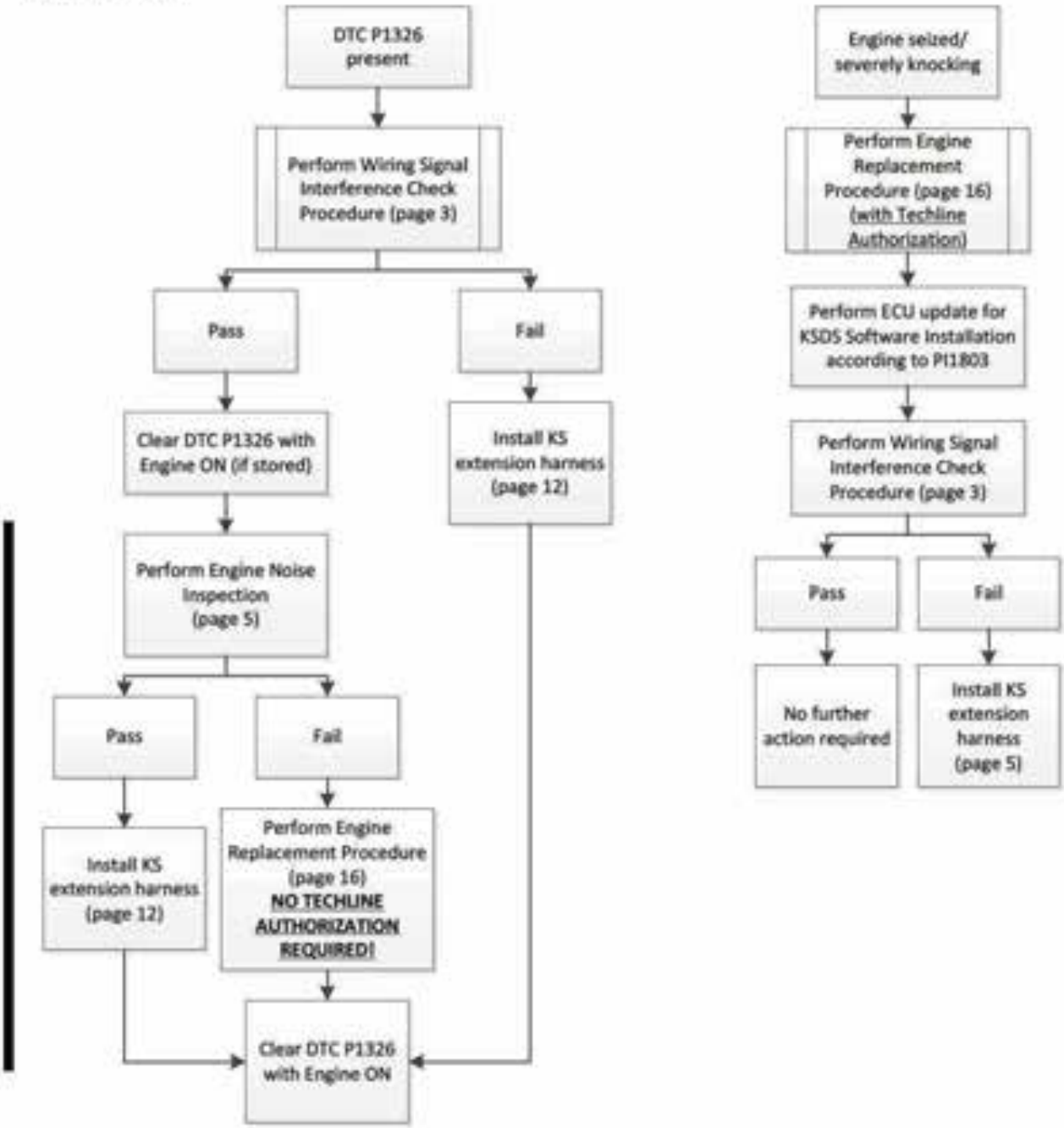
To ensure complete customer satisfaction, always remember to refer to WebDCS Warranty Coverage (validation) Inquiry Screen (Service → Warranty Coverage → Warranty Coverage Inquiry) for a list of any additional campaigns that may need to be performed on the vehicle before returning it to the customer.

File Under: <Product Improvement>

Circulate To: ☒ General Manager ☒ Service Manager ☒ Parts Manager ☒ Service Advisors ☒ Technicians ☒ Body Shop Manager ☐ Fleet Repair

SUBJECT: ENGINE REPLACEMENT INSTRUCTIONS FOR DTC P1326 (PI1803W/X)

Flow Chart:



Note: **If any concerns arise after completing the flow chart, open a Techline case online.**

*** IMPORTANT**

ALL claims for engine or harness replacement without the required diagnostic inspection/results or authorization are subject to claim chargeback/denial without exception.

Wiring Signal Interference Check Procedure:

1. Using the KDS **(connected to the internet)**, perform a Fault Code Search and confirm DTC P1326 is present.
   - If P1326 is present, proceed to the next step to perform the wiring signal interference check.
   - **If the engine is seized or severely knocking**, proceed to the engine replacement procedure on page 16 (with Techline authorization per Flow Chart).



2. Start/warm up the engine and ensure **ENGINE OIL** is at operating temperature (176°F).



3. From the KDS Home Screen, select S/W Management.



4. Select Engine Control → Wiring Signal Interference Check.



SUBJECT: ENGINE REPLACEMENT INSTRUCTIONS FOR DTC P1326 (PI1803W/X)

5. Ensure the engine is on and at idle and **ENGINE OIL** temperature is at 176°F degrees or higher. Select OK to proceed.



5b. Select OK to proceed.

NOTE: This test should only be performed if Knock Sensor Detection System - ECU Logic Improvement (PI1803) has previously been completed.



5c. If the conditions are not met, a pop-up as shown will be displayed.



6. Enter vehicle mileage and RO number (VIN is automatically populated).



7. Wiring Signal Interference Check test will begin and take about three (3) minutes to complete. **NOTE**: Do not push on the accelerator pedal.



- If the result is "OK", **clear DTC P1326** and then proceed to the Engine Noise Inspection procedure below.

★ NOTICE

DTC P1326 must be cleared in order to perform the Engine Noise Inspection Procedure.

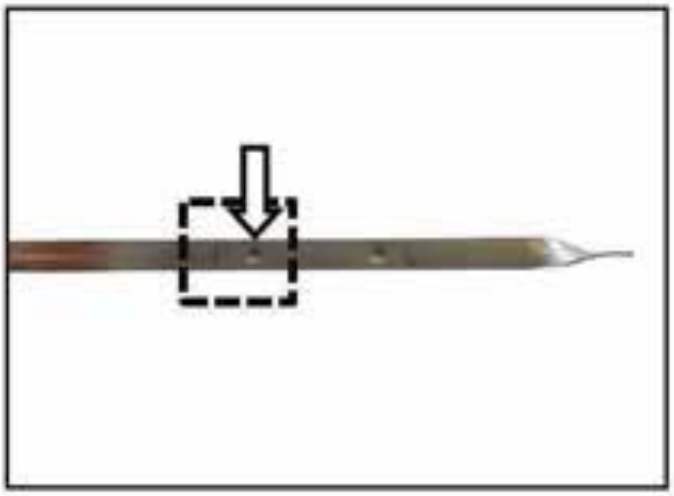


- If the result is "NOT OK", turn the engine off and proceed to **step 2** of the Knock Sensor (KS) Extension Harness Installation procedure on page 12.



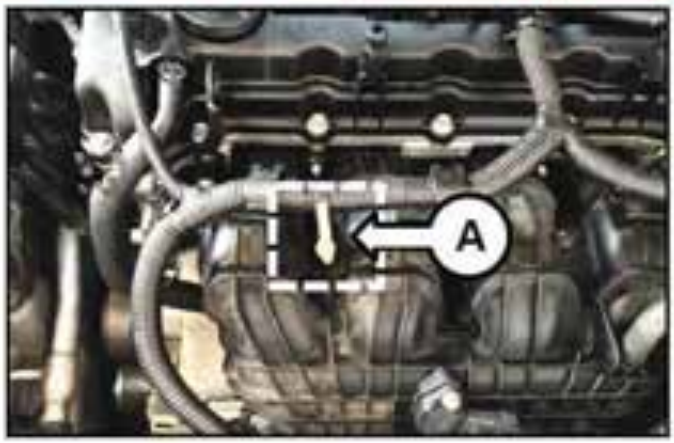
Engine Noise Inspection Procedure:

1. Prior to inspection, ensure the KDS is fully charged and is connected to the internet every day to ensure the latest update is received and installed.
   - Engine oil level should be at the "FULL" mark. Top off with 5W-30 if required.
   - Test requires the engine to be in satisfactory running condition and able to idle normally.
   - Engine coolant temperature should be above minimum test temperature: 185°F (85°C).



If the engine's running condition is poor due to issues unrelated to a connecting rod knocking noise (faulty sensors, intake/exhaust manifold leak, catalytic converter, etc.), diagnose and repair prior to performing this inspection procedure. If the engine cannot be tested or has other major concerns, **see Warranty Claim Authorization information on page 30.**

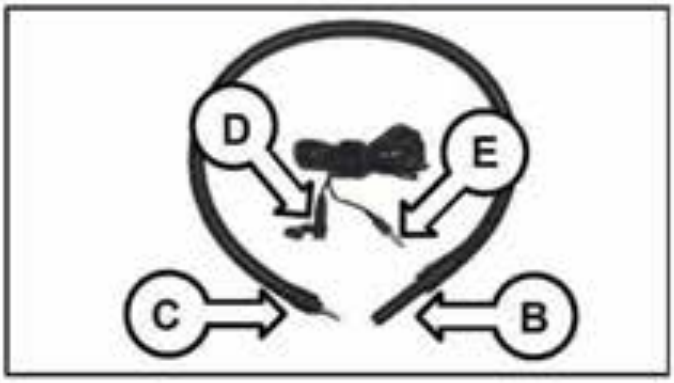
2. With the engine off, remove the dipstick (A).



*** NOTICE**

Engine cover removed in images for demonstration-only purposes.

3. Insert the engine noise tester SST adapter (B) into the dipstick tube then start and idle the engine.



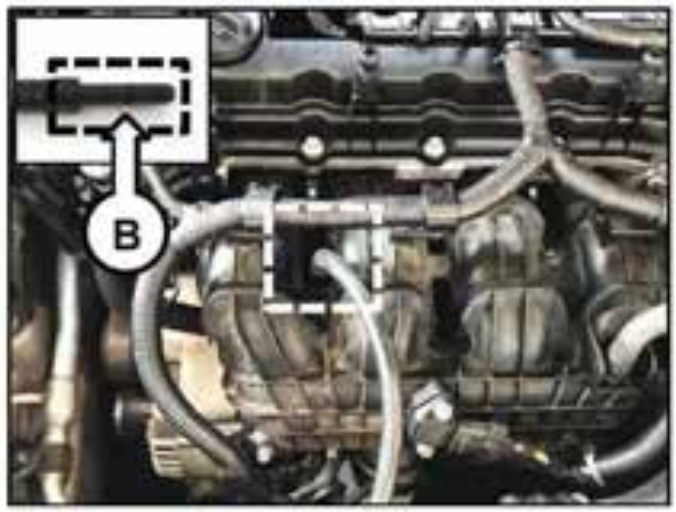
*** NOTICE**

To avoid false readings, ensure the adapter (B) is properly inserted into the dipstick tube and that the tube is not in contact with the intake manifold.

If the dipstick tube is not centered and is close to or touching the manifold, carefully adjust (bend) and center the dipstick tube with a pry bar.

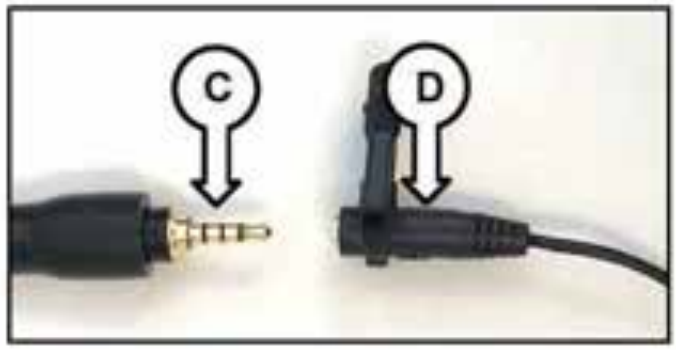


Not Centered Centered



Click here for a video tutorial of the Inspection Procedure.

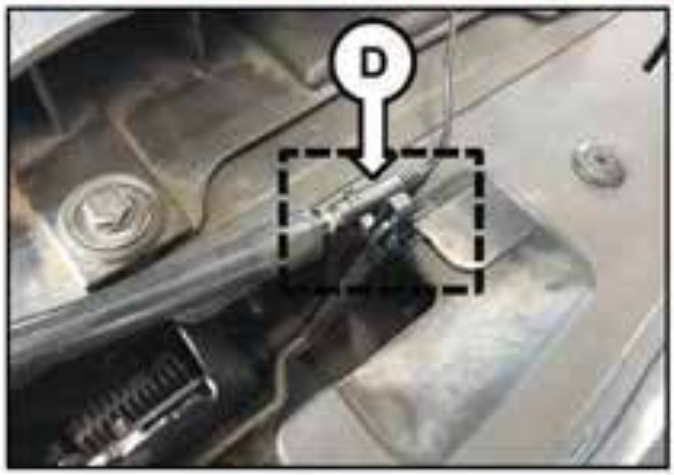
4. Connect the 3.5 mm male end of the engine noise tester SST (C) to the 3.5 mm female end of the extension cable (D).



5. Attach the SST clip of the extension cable (D) to the hood latch.

★ NOTICE

Make sure to route the extension cable away from moving parts (pulleys, fan, and belts and be careful not to get it pinched between door and body or window, etc.).



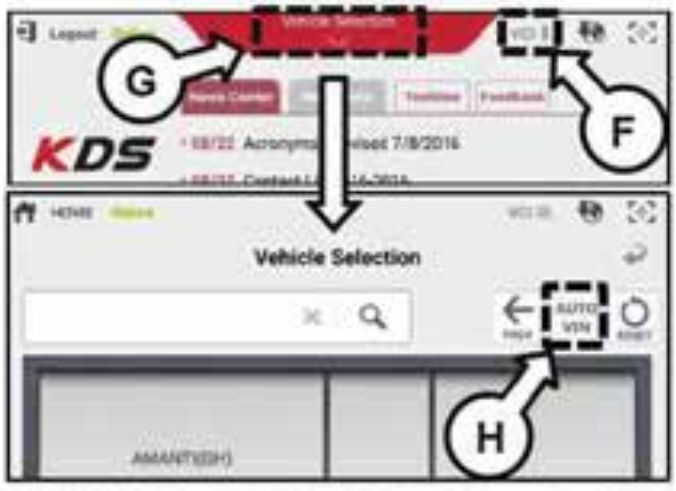
6. Connect the 3.5 mm male end (E) of the extension cable to the headphone port located at the upper left corner (KDS version 1.0) or at the bottom of the tablet (KDS version 2.0).



7. Connect the VCI-II to the OBD-II connector and launch the KDS application from the KDS tablet home page.



8. Confirm communication with VCI (F) and then configure the vehicle (G) using the **AUTO VIN** (H) feature.



9. Swipe up the "More" tab from the lower screen of the KDS and select "Special Inspection".



★ NOTICE

If the vehicle model/model year does not qualify for this campaign, a message will pop up; if so, verify that the vehicle is included in the list of affected VINs.

10. Complete the vehicle information form on the screen:

    - Mileage
    - RO number
    - Select "Verify" to verify the VIN

    Note: VIN must be verified with the "Verify" function in order to proceed to the next step.

    Select "Next" to continue.



11. Confirm that all of the pre-inspection items listed on the screen are true:

    - Engine Oil Level – Normal
    - Coolant Level – Normal
    - Engine Cover – Installed
    - Driver Window – Opened
    - A/C & Blower Motor – OFF
    - Audio & All Accessories – OFF
    - Engine – Warm up (185°F or higher)
    - Insert "A" into dipstick tube
    - Connect "B" part at tablet headphone port

    Select "Next" after checking items mentioned above.



12. The program will automatically check the engine sensors' data. Select the "Next" button if all the conditions are satisfied.
    - Engine Coolant Temperature: 185°F or higher
    - A/C Request to ECU: OFF

    Note: If the test item result is "NOT GOOD", correct the condition then select "Refresh Data".



13. Follow the instructions on the screen then select "Next".



14. Prior to the initial measurement, the program will automatically check if the engine noise tester is installed and operating correctly at engine idle and perform an internal diagnosis.

    Begin the second part of the engine noise tester check by selecting "Start".



*** NOTICE**

If the measured noise level is too low or abnormally high, an engine noise tester inspection message will pop up. Check and correct as necessary and start again.

15. With the vehicle in Park (A/T) / Neutral (M/T), increase and maintain the engine speed at 2,000-3,000 RPM for thirty (30) seconds.

    The program will automatically proceed to the next step when the engine noise tester is ready.



*** NOTICE**

Once the RPM is in the specified range, the time count (green bars) will be initialized.

16. With the vehicle in Park (A/T) / Neutral (M/T), begin the "2000rpm Test" by increasing and maintaining engine speed between 1,900-2,100 (2.4L) or 1,900-2,200 (2.0T) RPM until all three (3) measurements are complete.



17. When the "2000rpm Test" is complete, release the accelerator pedal so that engine maintains idle state for the "Idle Test".

18. The "Idle Test" will automatically begin. Keep the engine at idle and wait until all three (3) measurements are complete.



19. After the completion of the engine noise inspection, the KDS will automatically generate/display a "PASS" or "NO PASS" result.

    - If the inspection result is "PASS", proceed to the KS Extension Harness Installation procedure on page 12.
    - If the inspection result is "NO PASS," proceed to the engine replacement procedure on page 17.
    - If the inspection result is "RETEST" with an error code, see Adapter Error Code chart in Appendix 3 on page 35 for corrective action then repeat the inspection procedure starting from step 9.



20. Select "Finish" to complete the engine noise inspection. Ensure the KDS is connected to the internet and the "Special Inspection" KDS application is open to automatically submit the results to the Kia Server. To save and/or print the results as PDF, select "Print".

    If the KDS is not connected to the internet, up to five (5) results will stay pending in the queue until the KDS is connected to the internet with the "Special Inspection" application open.

    Note: The five (5) pending results must be submitted before a sixth (6th) test can be conducted.



21. Disconnect the engine noise tester from the KDS and carefully remove the adapter (B) from the dipstick tube by grasping the engine noise tester adapter.

SUBJECT: ENGINE REPLACEMENT INSTRUCTIONS FOR DTC P1326 (PI1803W/X)

KS Extension Harness Installation Procedure:

NOTE: Photos below are from a 15MY Optima (QF). Components and their location may vary in different models.

1. Inspect the ECU harness (A) and verify if the Knock Sensor wiring extension harness (B) has previously been installed.

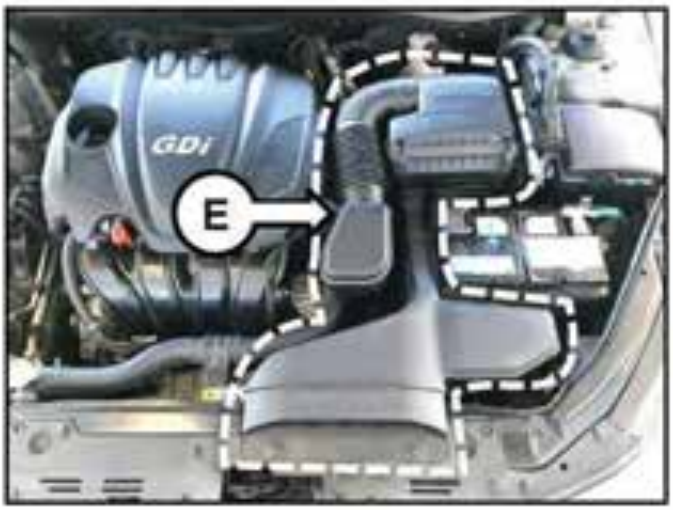
   NOTE: To identify the extension harness (B), look for an external harness (B) which should be cable-tied to the existing wiring harness (A) leading by the intake manifold (C) to the knock sensor (D), as shown.

   - If the extension harness (B) has been installed, open a Techline case online.
   - If the extension harness (B) has not been installed, proceed to the next step.





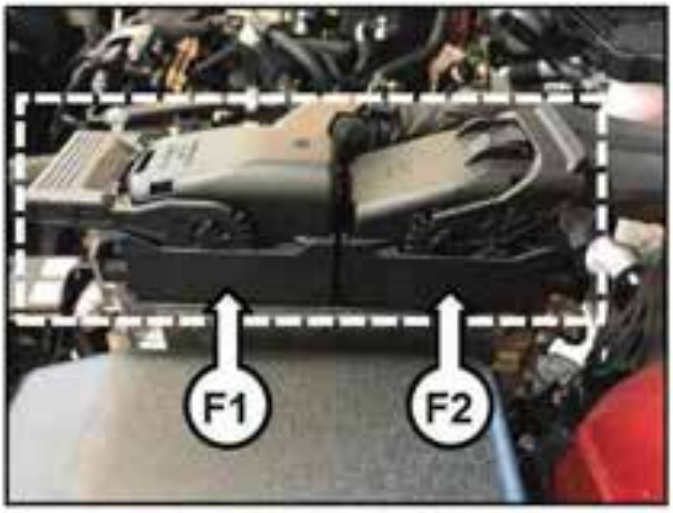
2. Remove the air cleaner and duct assembly (E).



3. Disconnect the ECU connector* (figure F1 **or** F2) (*see IMPORTANT note below).

*** IMPORTANT**

Location of the ECU connector may vary from model to model. Refer to the table on page 13 for the ECU connector number and the applicable ETM Manual on KGIS for the location of the ECU connector.

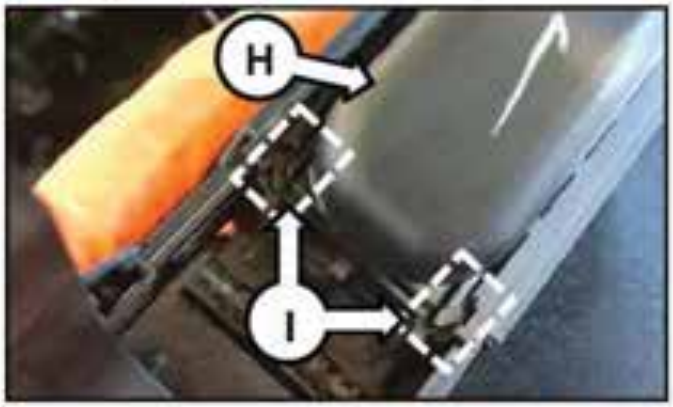


MY	Model	Engine	ECU Connector Number
2011-2013	TF	2.4	CHG-BG
		2.0T	CHTG-BG
2014	QF	2.4	C200-B
		2.0T	C100-B
2011-2013	SL	2.0T	CHTG-BG
2012-2013	XMa	2.4	CHGG-B
2014			C300-B

4. Cut the existing cable-tie (G) from the connector.



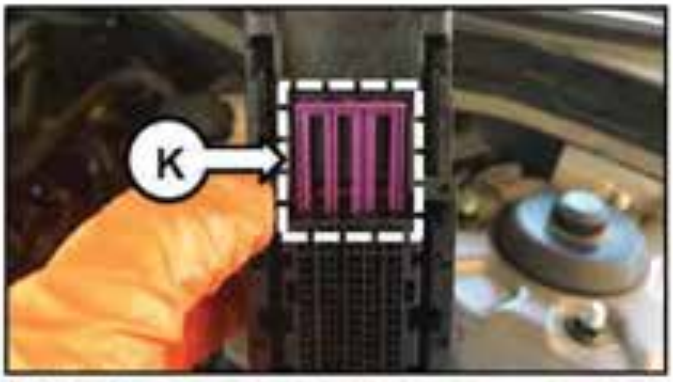
5. Remove the ECU connector cover (H) by carefully unclipping the two (2) tabs (I) and sliding the cover (H) towards the tabs (I).



6. Carefully remove the electrical tape (J) to expose the harness wires.



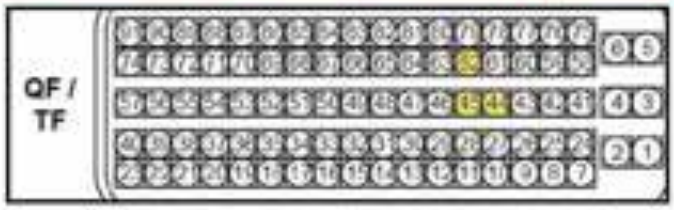
7. Remove the pin retainer (K).



8. Locate the three (3) knock sensor circuit terminals from the ECU connector. Refer to the "Schematic Diagrams → Engine Electrical System → Engine Control System → Schematic Diagrams" chapter of the applicable ETM on KGIS.

44. Knock Sensor Shielded Ground
45. Knock Sensor Ground
62. Knock Sensor Interface (Signal)

Click here to see a video of terminal removal.





9. Remove the three (3) terminals **one at a time** and insert the new terminals of the extension harness into the ECU connector (F). Reinstall pin retainer (K) and reassemble the connector (F).

Pin	Extension Wire Color
44	Blue
45	Black
62	Red

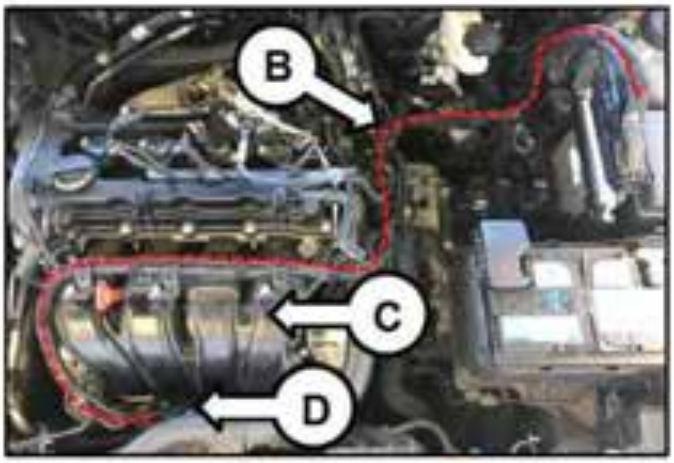
NOTE: Be sure to note the rotational position of the terminals during removal. They are directional and need to be reinstalled in the same "clock" position.



10. Route the extension harness (B) along the existing harness (A) leading by the intake manifold (C) to the knock sensor (D), **exactly** as shown.

*** IMPORTANT**

The harness (B) must be routed exactly as shown to prevent related DTCs.



*** IMPORTANT**

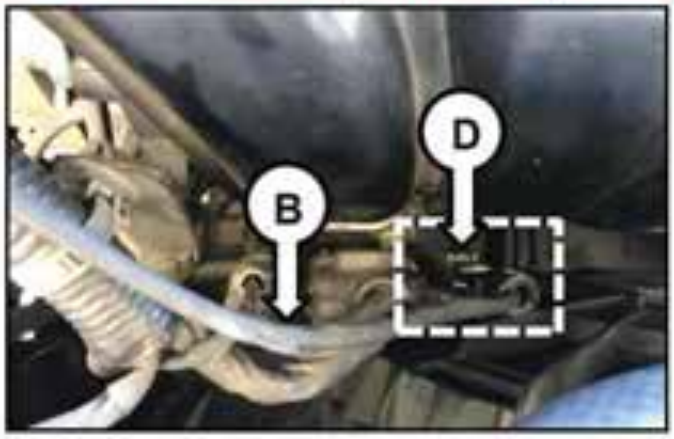
The harness (B) must be routed above and secured to the harness protector (L1) and UNDER the Breather Hose (L2) and Camshaft Position Sensor (L3).





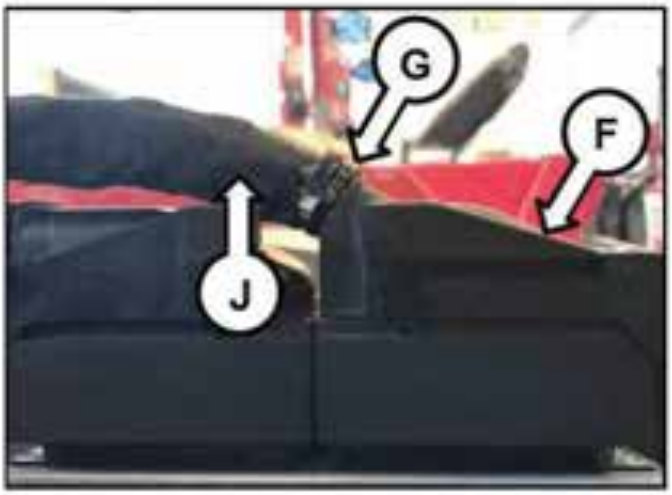


11. Connect the extension harness (B) to the knock sensor (D).

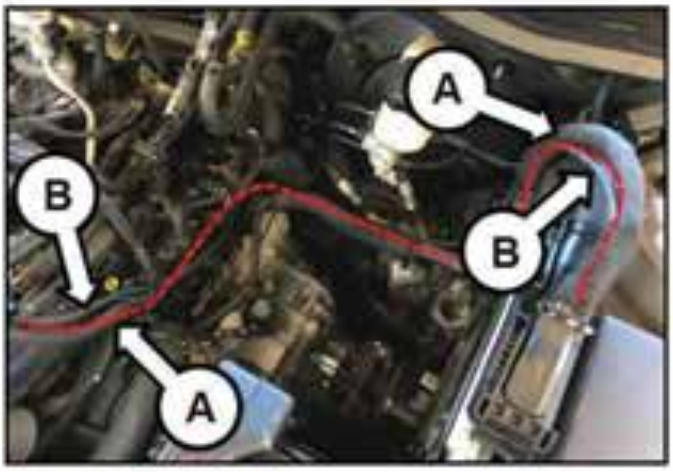


12. Cut off and discard the three (3) old knock sensor circuit terminals and the old knock sensor connector and secure the remaining wires to the new extension harness using the supplied electrical tape. **NOTE**: Complete removal of the old knock sensor wires is not necessary. Only remove the old terminals and connector.

13. Secure the extension harness at the connector (F) by replacing the cable-tie (G) removed in step 4 with a new supplied cable-tie and the electrical tape (J) removed in step 6 with new supplied electrical tape.



14. Secure the extension harness (B) to the existing harness (A) using the supplied cable-ties. Tuck and secure any excess wiring of the extension harness near the ECU with cable-tie.



15. Reinstall all removed components in the reverse order of removal.

16. Erase the P1326 DTC with the KDS and start the engine to confirm proper operation.

Engine Replacement Procedure:

1. Remove the engine assembly by referring to the "Engine And Transmission (Transaxle) Assembly → Engine And Transmission (Transaxle) Assembly → Repair procedures" chapter in the applicable Shop Manual on KGIS.

   Refer to TSB ENG190 for information regarding engine replacement practices.



2. After removal of the engine from the vehicle, remove all components that will need to be transferred by referring to the applicable Shop Manual on KGIS.

3. Place the new engine block on an engine stand.

4. Install all removed components from the old engine block onto the new engine block utilizing all parts from Service Kit I and II. Be advised of notes below.

   Tightening torque for Knock Sensor:
   13.7 – 17.4 lb.ft (18.6 – 23.5 N.m, 1.9 – 2.4 kgf.m)

   Notes:

   High Pressure Pump & Roller Tappet:

   - Refer to TSB ENG083 for special attention and handling procedures of GDI-specific components.
   - When installing the high pressure pump and roller tappet onto the new engine, apply engine oil to the roller tappet, and O-rings of the high pressure pump.



   Tightening torques of pump bolts:
   9.4 – 10.9 lb.ft (12.8 – 14.7 N.m, 1.3 – 1.5 kgf.m)

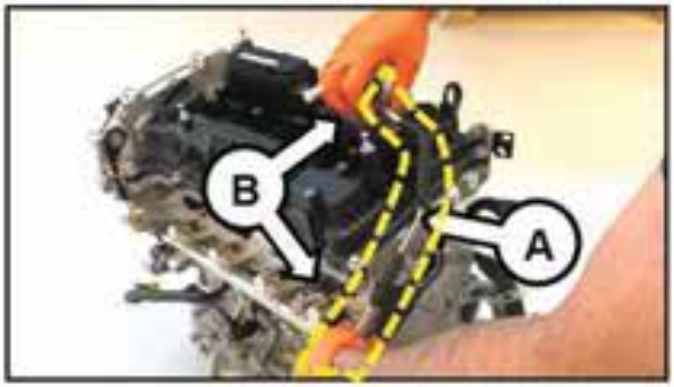
   Tightening torques of pipe flare nut:
   19.5 – 23.9 lb.ft (26.5 – 32.4 N.m, 2.7 – 3.3 kgf.m)

*** NOTICE**

Refer to TSB ENG083 for gasoline direct injection (GDI) specific information, including related warnings and cautions for handling high fuel pressure system components.

High Pressure Fuel Pipe:

1. Properly position the new fuel pipe (A) and then hand-tighten both flare nuts (B).



2. Install the pipe retaining bracket and bolt (C) and torque to specifications.

★ NOTICE

If the bracket and bolt are missing, order and install a new bracket and bolt.

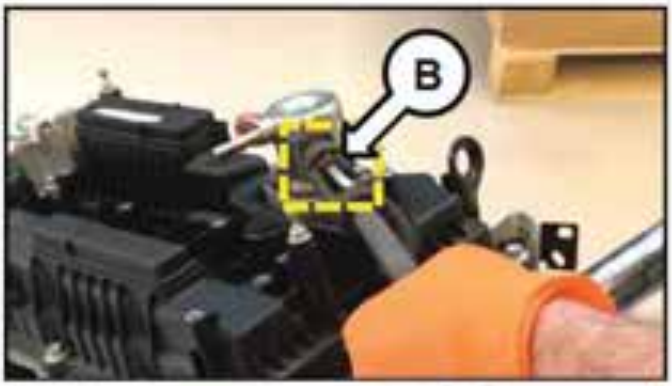
Tightening torque (bracket bolt):
5.8 – 8.7 lb.ft (7.8 –11.8 N.m, 0.8 – 1.2 kgf.m)

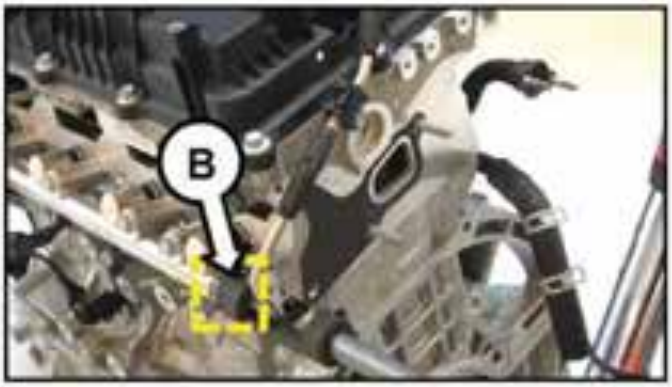


3. Using a click-type/electronic torque wrench and SST 09314-3Q100, torque both flare nuts (B) to specifications.

Tightening torque (flare nuts):
19.5 – 23.9 lb.ft (26.5 – 32.4 N.m, 2.7 – 3.3 kgf.m)

Click here to see a video tutorial of high pressure fuel pipe install (includes high pressure pump install).



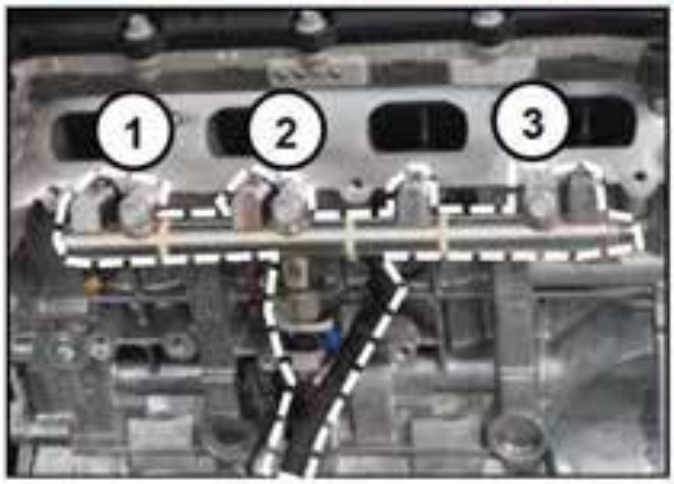


★ IMPORTANT

The high pressure fuel pipe bracket and bolt must be installed and properly torqued prior to torqueing the high pressure fuel pipe flare nuts.

Delivery Pipe:

- Refer to TSB ENG083 for special attention and handling procedures of GDI-specific components.
- Prior to installing the delivery pipe, be sure to replace all of the injector O-rings and injector retainers.
- Prior to installing the delivery pipe, apply engine oil to the injector O-rings.
- When installing the delivery pipe, use caution not to damage the tip of the injector.
- Be sure to replace the delivery pipe retaining bolts and torque them in the sequence shown.



Tightening torque of bolts:
13.7 – 17.4 lb.ft (18.6 – 23.5 N.m, 1.9 – 2.4 kgf.m)

*** NOTICE**

Combustion seals must be compressed after installation and before attempting to install into the cylinder head. Use SST 09353 2B000 (refer to TSB ENG083).

Dipstick Tube & Dipstick:

- Prior to installing the new tube, lubricate the o-ring located at the bottom of the tube with engine oil.
- Install the red dipstick included in Service Kit I.



Tightening torque of bolt:
5.8 – 8.7 lb.ft (7.8 – 11.8 N.m, 0.8 - 1.2 kgf.m)

Intake Manifold:

- Prior to installation, replace the intake manifold gaskets.
- Torque bolts in the sequence shown.



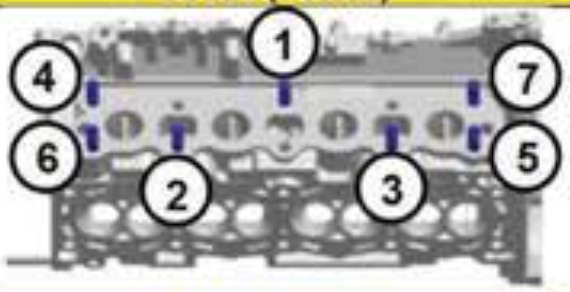
Tightening torque of bolts:
13.7 – 17.4 lb.ft (18.6 – 23.5 N.m, 1.9 – 2.4 kgf.m)

Exhaust Manifold:

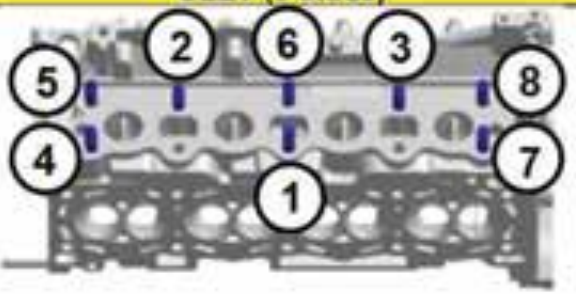
- All engines supplied under this Product Improvement Campaign have the exhaust manifold studs configured for SULEV engines.
- Using the pictures to the right, check the exhaust manifold stud location and quantity. Relocate as required for ULEV engines and obtain one (1) extra from the removed engine.
- Prior to installation, replace the exhaust manifold gasket and front muffler gasket.
- Torque nuts in the sequence shown.

Tightening torque of nuts:
36.2 – 39.7 lb.ft (49.0 – 53.9 N.m, 5.0 – 5.5 kgf.m)

SULEV (7 studs)



ULEV (8 studs)



***For 14MY Sorento (XMa) vehicles only: check the underhood emissions label and record whether the label references ULEV or SULEV. This information is needed to select/order the correct replacement engine.**


KIA MOTORS CORPORATION
VEHICLE EMISSION CONTROL INFORMATION

Conforms to regulations : 2014 MY

U.S.EPA : T2B5 LDV OBD : CA II Fuel : Gasoline

California : ULEV PC OBD : CA II Fuel : Gasoline

Engine : DFEH02502WL-TWC/TWC

Evap. : FKMXR0130DRE

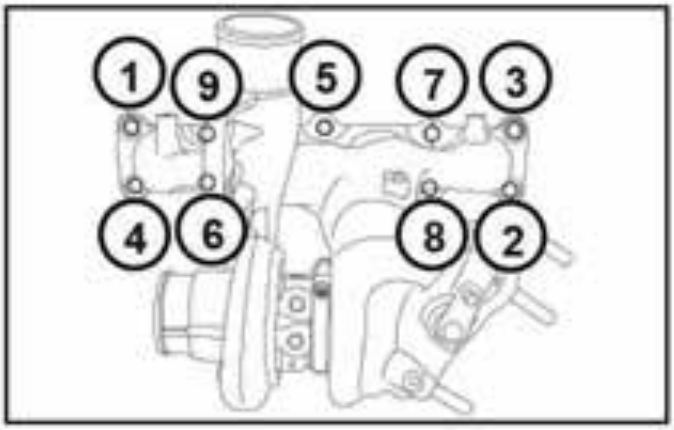
No adjustments needed. A402

[WARNING] 35417-2G402

Loaded I/M testing of permanent four-wheel drive or traction control-equipped vehicles must be conducted on a four-wheel drive speed synchronized dynamometer. Otherwise, a non-loaded test procedure must be performed.

- On Turbo engines, replace the turbocharger oil feed line and gaskets.

Tightening torque of oil feed line bolt:
8.7 – 13.0 lb.ft (11.8 – 17.7 N.m, 1.2 – 1.8 kgf.m)
Tightening torque of oil feed line nuts:
5.8 – 8.7 lb.ft (7.8 – 11.8 N.m, 0.8 – 1.2 kgf.m)
Tightening torque of oil drain line nuts and bolts:
5.8 – 8.7 lb.ft (7.8 – 11.8 N.m, 0.8 – 1.2 kgf.m)



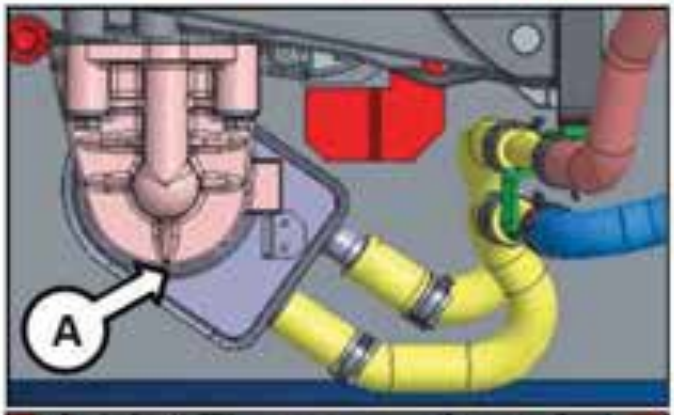
- Torque exhaust manifold nuts in the sequence shown.

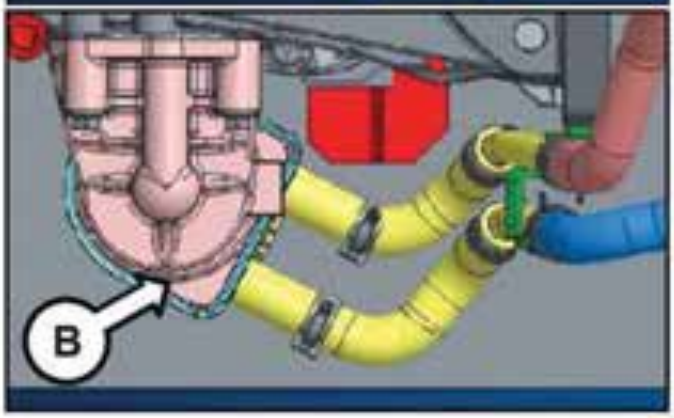
Tightening torque of nuts:
36.2 – 39.7 lb.ft (49.0 – 53.9 N.m, 5.0 – 5.5 kgf.m)

Oil Cooler Tube Assembly:

New engines may be supplied with a different oil cooler. Use steps below to determine the need for a replacement oil cooler tube assembly.

- If the new engine's (bigger) oil cooler (A) does not match the old engine's (smaller) oil cooler (B), replace the oil cooler tube assembly with the improved part. See parts table on page 23.
- If the new engine's (bigger) oil cooler (A) matches the old engine's (bigger) oil cooler (A), reuse the old engine's oil cooler tube assembly.
- If the new engine's (smaller) oil cooler (B) matches the old engine's (smaller) oil cooler (B), reuse the old engine's oil cooler tube assembly.





Drive Plate / Flywheel Bolts:

- Replace all seven (7) drive plate (AT) or flywheel (MT) bolts.

Tightening torque of nuts:
86.8 – 93.9 lb.ft (117.7 – 125.5 N.m, 12.0 – 13.0 kgf.m)



Drive Plate Bolt (A/T)



Flywheel Bolt (M/T)

Torque Converter

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



Not Fully Inserted



Fully Inserted

5. Reinstall the assembled engine and transmission/transaxle into the vehicle.

   Be sure to:

   - Fill crankcase with 5W-30 oil (~5.8 quarts).
   - Fill and bleed the cooling system with 50/50 coolant or mixture appropriate for area.
   - Pressurize the fuel system before starting the vehicle.
   - Reset engine adaptive values and perform steering angle sensor calibration.

   Refer to TSB ENG190 for information regarding engine replacement practices.

6. Verify proper operation of the vehicle with road test, and **with the engine ON (running), erase any stored DTCs** (e.g., EPS, ESC, and TPMS) that may have been set by this procedure. Verify no leaks exist and ensure engine oil and coolant are at their proper level.

   If any DTCs are still active, follow any related diagnosis and repair as needed.

SUBJECT: ENGINE REPLACEMENT INSTRUCTIONS FOR DTC P1326 (PI1803W/X)

AFFECTED VEHICLE RANGE:

Model	Production Date Range
11-13MY Optima (QF/TF)	August 12, 2010 through September 27, 2013
14MY Optima (QF)	August 28, 2013 through May 15, 2014
12-14MY Sorento (XMa)	April 19, 2011 through February 10, 2014
11-13MY Sportage (SL)	December 30, 2010 through August 30, 2013

REQUIRED TOOL:

Tool Name	Tool Part No.	Figure	Comments
Torque Wrench Socket	09314 3Q100		Refer to TSB ENG083 for detailed usage instructions
Injector Combustion Seal Ring Installer	09353 2B000		
Pin Tool	91400 00000QQK		Auto-shipped to Dealers in 10/2018. Replacements can be ordered through Mobis Parts America.
Click-Type or Electronic Torque Wrench	N/A		Locally Sourced
Engine Noise Tester SST	GIT1XTDCP005		Auto-shipped to Dealers in June 2017 for SC147 For replacements, contact Snap-On Business Solutions at (888) 542-1011.

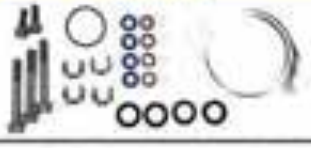
REQUIRED PARTS:

Part Name	MY	Model	Part Number		Figure
			2.4GDI	2.0T-GDI	
Engine Long Block	2011-2013	QF, TF	21101 2GK05QQKR	21101 2GK07QQKR	
		SL	-	21101 2GK07QQKR	
	2012-2013	XMa	21101 2GK09QQKR	-	
	2014	QF	21101 2GK06QQKR	21101 2GK08QQKR	
		XMa ULEV*	21101 2GK11QQKR	-	
		XMA SULEV*	21101 2GK11QQKR	-	

*See page 19 for details about underhood label check.

Part Name	Engine	Part Number	Figure
Service Kit I	2.4GDI	21111 2GK50QQK	
	2.0T-GDI	21111 2GK60QQK	

SUBJECT: ENGINE REPLACEMENT INSTRUCTIONS FOR DTC P1326 (PI1803W/X)

Part Name	Engine	Part Number	Figure
Service Kit II	2.4GDI and 2.0T-GDI	21111 2GK70QQK	
Drive Plate Bolts	2.4GDI and 2.0T-GDI	23311 25050	
		23231 25200 (MT)	
Oil Cooler Tube Assembly **(replacement is conditional, refer to page 20)**	2.4GDI	25470 2G050QQK	
	2.0T-GDI	25470 2G650QQK	
KS Extension Harness	2.4GDI and 2.0T-GDI	*91400 2T100QQK	

***NOTE: Old part number 91400 2T000QQK has been superseded by new part number 91400 2T100QQK.**

WARRANTY INFORMATION (PI1803**W1**, MIL ON WITH P1326):

N Code: N99 C Code: C99

Model	Claim Type	Causal P/N	Qty.	Repair Description	Labor Op Code	Op Time	Replacement P/N	Qty.
Opt. (QF) 2.4L	R	23060 2G400	0	(PI1803W1) 2.4L GDI MIL ON with P1326, KSDS Wire Harness Inspection Pass, Engine Noise Inspection Pass, & KSDS Extension Harness Install	180A23R8	1.1 M/H	*91400 2T100QQK	1
				(PI1803W1) 2.4L GDI MIL ON with P1326, KSDS Wire Harness Inspection Pass, Engine Noise Inspection Fail, & Engine Replacement	180A23R0	8.7 M/H	21111 2GK50QQK	1
							21111 2GK70QQK	1
							(AT) 23311 25050	7
							(MT) 23231 25200	
							(11~13MY) 21101 2GK05QQKR	1
							(14MY) 21101 2GK06QQKR	
				(PI1803W1) 2.4L GDI MIL ON with P1326, KSDS Wire Harness Inspection Fail, KSDS Extension Harness Install	180A23R1	0.8 M/H	*91400 2T100QQK	1

***NOTE: Old part number 91400 2T000QQK has been superseded by new part number 91400 2T100QQK.**

SUBJECT: ENGINE REPLACEMENT INSTRUCTIONS FOR DTC P1326 (PI1803W/X)

Model	Claim Type	Causal P/N	Qty.	Repair Description	Labor Op Code	Op Time	Replacement P/N	Qty.
Opt. (QF) 2.0L T	R	23060 2G400	0	(PI1803W1) 2.0L T-GDI MIL ON with P1326, KSDS Wire Harness Inspection Pass, Engine Noise Inspection Pass, & KSDS Extension Harness Install	180A23R9	1.1 M/H	*91400 2T100QQK	1
				(PI1803W1) 2.0L T-GDI MIL ON with P1326, KSDS Wire Harness Inspection Pass, Engine Noise Inspection Fail, & Engine Replacement	180A23R2	8.9 M/H	21111 2GK60QQK	1
							21111 2GK70QQK	1
							(AT) 23311 25050	7
							(MT) 23231 25200	
							(11-13MY) 21101 2GK07QQKR	1
							(14MY) 21101 2GK06QQKR	
				(PI1803W1) 2.0L T-GDI MIL ON with P1326, KSDS Wire Harness Inspection Fail, KSDS Extension Harness Install	180A23R3	0.8 M/H	*91400 2T100QQK	1
Opt. (TF) 2.4L	R	23060 2G400	0	(PI1803W1) 2.4L GDI MIL ON with P1326, KSDS Wire Harness Inspection Pass, Engine Noise Inspection Pass, & KSDS Extension Harness Install	180142RK	1.1 M/H	*91400 2T100QQK	1
				(PI1803W1) 2.4L GDI MIL ON with P1326, KSDS Wire Harness Inspection Pass, Engine Noise Inspection Fail, & Engine Replacement	180142R0	8.7 M/H	21111 2GK50QQK	1
							21111 2GK70QQK	1
							(AT) 23311 25050	7
							(MT) 23231 25200	
							21101 2GK05QQKR	1
				(PI1803W1) 2.4L GDI MIL ON with P1326, KSDS Wire Harness Inspection Fail, KSDS Extension Harness Install	180142R5	0.8 M/H	*91400 2T100QQK	1
Opt. (TF) 2.0L T	R	23060 2G400	0	(PI1803W1) 2.0L T-GDI MIL ON with P1326, KSDS Wire Harness Inspection Pass, Engine Noise Inspection Pass, & KSDS Extension Harness Install	180142RN	1.1 M/H	*91400 2T100QQK	1
				(PI1803W1) 2.0L T-GDI MIL ON with P1326, KSDS Wire Harness Inspection Pass, Engine Noise Inspection Fail, & Engine Replacement	180142R3	8.7 M/H	21111 2GK60QQK	1
							21111 2GK70QQK	1
							(AT) 23311 25050	7
							(MT) 23231 25200	
							21101 2GK07QQKR	1
				(PI1803W1) 2.0L T-GDI MIL ON with P1326, KSDS Wire Harness Inspection Fail, KSDS Extension Harness Install	180142R8	0.8 M/H	*91400 2T100QQK	1

*NOTE: Old part number 91400 2T000QQK has been superseded by new part number 91400 2T100QQK.

SUBJECT: ENGINE REPLACEMENT INSTRUCTIONS FOR DTC P1326 (PI1803W/X)

Model	Claim Type	Causal P/N	Qty.	Repair Description	Labor Op Code	Op Time	Replacement P/N	Qty.
Sor. (XMa) 2.4L	R	21020 2G010	0	(PI1803**W1**) 2.4L GDI 2WD MIL ON with P1326, KSDS Wire Harness Inspection Pass, Engine Noise Inspection Pass, & KSDS Extension Harness Install	180A24R8	1.1 M/H	*91400 2T100QQK	1
				(PI1803**W1**) 2.4L GDI 2WD MIL ON with P1326, KSDS Wire Harness Inspection Pass, Engine Noise Inspection Fail, & Engine Replacement	180A24R0	8.7 M/H	21111 2GK50QQK	1
							21111 2GK70QQK	1
							(AT) 23311 25050	7
							(MT) 23231 25200	
							(12-13MY) 21101 2GK09QQKR	1
							(14MY ULEV) 21101 2GK11QQKR	
							(14MY ULEV or SULEV) 21101 2GK11QQKR	
				(PI1803**W1**) 2.4L GDI 2WD MIL ON with P1326, KSDS Wire Harness Inspection Fail, KSDS Extension Harness Install	180A24R1	0.8 M/H	*91400 2T100QQK	1
				(PI1803**W1**) 2.4L GDI 4WD MIL ON with P1326, KSDS Wire Harness Inspection Pass, Engine Noise Inspection Pass, & KSDS Extension Harness Install	180A24R9	1.1 M/H	*91400 2T100QQK	1
				(PI1803**W1**) 2.4L GDI 4WD MIL ON with P1326, KSDS Wire Harness Inspection Pass, Engine Noise Inspection Fail, & Engine Replacement	180A24R2	8.9 M/H	21111 2GK50QQK	1
							21111 2GK70QQK	1
							(AT) 23311 25050	7
							(MT) 23231 25200	
							(12-13MY) 21101 2GK09QQKR	1
							(14MY ULEV) 21101 2GK11QQKR	
							(14MY ULEV or SULEV) 21101 2GK11QQKR	
				(PI1803**W1**) 2.4L GDI AWD MIL ON with P1326, KSDS Wire Harness Inspection Fail, KSDS Extension Harness Install	180A24R3	0.8 M/H	*91400 2T100QQK	1

***NOTE: Old part number 91400 2T000QQK has been superseded by new part number 91400 2T100QQK.**

SUBJECT: ENGINE REPLACEMENT INSTRUCTIONS FOR DTC P1326 (PI1803W/X)

Model	Claim Type	Causal P/N	Qty.	Repair Description	Labor Op Code	Op Time	Replacement P/N	Qty.
Spo. (SL) 2.0L T	R	23060 2G400	0	(PI1803**W1**) 2.0L T-GDI 2WD MIL ON with P1326, KSDS Wire Harness Inspection Pass, Engine Noise Inspection Pass, & KSDS Extension Harness Install	160143RN	1.2 M/H	*91400 2T100QQK	1
				(PI1803**W1**) 2.0L T-GDI 2WD MIL ON with P1326, KSDS Wire Harness Inspection Pass, Engine Noise Inspection Fail, & Engine Replacement	160143R3	8.0 M/H	21111 2GK60QQK	1
							21111 2GK70QQK	1
							(AT) 23311 25050	7
							(MT) 23231 25200	
							21101 2GK07QQKR	1
				(PI1803**W1**) 2.0L T-GDI 2WD MIL ON with P1326, KSDS Wire Harness Inspection Fail, KSDS Extension Harness Install	160143R8	0.9 M/H	*91400 2T100QQK	1
				(PI1803**W1**) 2.0L T-GDI 4WD MIL ON with P1326, KSDS Wire Harness Inspection Pass, Engine Noise Inspection Pass, & KSDS Extension Harness Install	160143RO	1.2 M/H	*91400 2T100QQK	1
				(PI1803**W1**) 2.0L T-GDI 4WD MIL ON with P1326, KSDS Wire Harness Inspection Pass, Engine Noise Inspection Fail, & Engine Replacement	160143R4	8.4 M/H	21111 2GK60QQK	1
							21111 2GK70QQK	1
							(AT) 23311 25050	7
							(MT) 23231 25200	
							21101 2GK07QQKR	1
				(PI1803**W1**) 2.0L T-GDI 4WD MIL ON with P1326, KSDS Wire Harness Inspection Fail, KSDS Extension Harness Install	160143R9	0.9 M/H	*91400 2T100QQK	1

*NOTE: Old part number 91400 2T000QQK has been superseded by new part number 91400 2T100QQK.

SUBJECT: ENGINE REPLACEMENT INSTRUCTIONS FOR DTC P1326 (PI1803W/X)

WARRANTY INFORMATION (PI1803X1, ENGINE SEIZED/SEVERE KNOCKING):
N Code: N99 C Code: C99

Model	Claim Type	Causal P/N	Qty.	Repair Description	Labor Op Code	Op Time	Replacement P/N	Qty.
Opt. (QF) 2.4L	R	23060 2G400	0	(PI1803X1) 2.4L GDI Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Pass	180A23R4	8.4 M/H	21111 2GK50QGK	1
							21111 2GK70QGK	1
							(AT) 23311 25050	7
							(MT) 23231 25200	
							(11-13MY) 21101 2GK05QGKR	1
							(14MY) 21101 2GK06QGKR	
				(PI1803X1) 2.4L GDI Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Fail, KSDS Wire Harness Install	180A23R6	8.9 M/H	21111 2GK50QGK	1
							21111 2GK70QGK	1
							(AT) 23311 25050	7
							(MT) 23231 25200	
							(11-13MY) 21101 2GK05QGKR	1
							(14MY) 21101 2GK06QGKR	
							*91400 2T100QGK	1
Opt. (QF) 2.0L T	R	23060 2G400	0	(PI1803X1) 2.0L T-GDI Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Pass	180A23R5	8.7 M/H	21111 2GK60QGK	1
							21111 2GK70QGK	1
							(AT) 23311 25050	7
							(MT) 23231 25200	
							(11-13MY) 21101 2GK07QGKR	1
							(14MY) 21101 2GK08QGKR	
				(PI1803X1) 2.0L T-GDI Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Fail, KSDS Wire Harness Install	180A23R7	9.2 M/H	21111 2GK60QGK	1
							21111 2GK70QGK	1
							(AT) 23311 25050	7
							(MT) 23231 25200	
							(11-13MY) 21101 2GK07QGKR	1
							(14MY) 21101 2GK08QGKR	
							*91400 2T100QGK	1
Opt. (TF) 2.4L	R	23060 2G400	0	(PI1803X1) 2.4L GDI Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Pass	180142RA	8.4 M/H	21111 2GK50QGK	1
							21111 2GK70QGK	1
							(AT) 23311 25050	7
							(MT) 23231 25200	
							21101 2GK05QGKR	1
				(PI1803X1) 2.4L GDI Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Fail, KSDS Wire Harness Install	180142RF	8.9 M/H	21111 2GK50QGK	1
							21111 2GK70QGK	1
							(AT) 23311 25050	7
							(MT) 23231 25200	
							21101 2GK05QGKR	1
							*91400 2T100QGK	1

***NOTE: Old part number 91400 2T000QGK has been superseded by new part number 91400 2T100QGK.**

SUBJECT: ENGINE REPLACEMENT INSTRUCTIONS FOR DTC P1326 (PI1803W/X)

Model	Claim Type	Causal P/N	Qty.	Repair Description	Labor Op Code	Op Time	Replacement P/N	Qty.
Opt. (TF) 2.0L T	R	23060 2G400	0	(PI1803X1) 2.0T-GDI Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Pass	180142RD	8.7 M/H	21111 2GK60QGK	1
							21111 2GK70QGK	1
							(AT) 23311 25050	7
							(MT) 23231 25200	
							21101 2GK07QGKR	1
				(PI1803X1) 2.0T-GDI Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Fail, KSDS Wire Harness Install	180142RI	9.2 M/H	21111 2GK60QGK	1
							21111 2GK70QGK	1
							(AT) 23311 25050	7
							(MT) 23231 25200	
							21101 2GK07QGKR	1
							*91400 2T100QGK	1
Scr. (XMa) 2.4L	R	21020 2G010	0	(PI1803X1) 2.4L GDI 2WD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Pass	180A24R4	8.4 M/H	21111 2GK50QGK	1
							21111 2GK70QGK	1
							(AT) 23311 25050	7
							(MT) 23231 25200	
							(12-13MY) 21101 2GK09QGKR	1
							(14MY ULEV) 21101 2GK11QGKR	
							(14MY ULEV or SULEV) 21101 2GK11QGKR	
				(PI1803X1) 2.4L GDI 2WD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Fail, KSDS Wire Harness Install	180A24R6	8.9 M/H	21111 2GK50QGK	1
							21111 2GK70QGK	1
							(AT) 23311 25050	7
							(MT) 23231 25200	
							(12-13MY) 21101 2GK09QGKR	1
							(14MY ULEV) 21101 2GK11QGKR	
							(14MY ULEV or SULEV) 21101 2GK11QGKR	
							*91400 2T100QGK	1
				(PI1803X1) 2.4L GDI AWD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Pass	180A24R5	8.6 M/H	21111 2GK50QGK	1
							21111 2GK70QGK	1
							(AT) 23311 25050	7
							(MT) 23231 25200	
							(12-13MY) 21101 2GK09QGKR	1
							(14MY ULEV) 21101 2GK11QGKR	
							(14MY ULEV or SULEV) 21101 2GK11QGKR	
				(PI1803X1) 2.4L GDI AWD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Fail, KSDS Wire Harness Install	180A24R7	9.1 M/H	21111 2GK50QGK	1
							21111 2GK70QGK	1
							(AT) 23311 25050	7
							(MT) 23231 25200	
							(12-13MY) 21101 2GK09QGKR	1
							(14MY ULEV) 21101 2GK11QGKR	
							(14MY ULEV or SULEV) 21101 2GK11QGKR	
							*91400 2T100QGK	1

*NOTE: Old part number 91400 2T000QGK has been superseded by new part number 91400 2T100QGK.

SUBJECT: ENGINE REPLACEMENT INSTRUCTIONS FOR DTC P1326 (PI1803W/X)

Model	Claim Type	Causal P/N	Qty.	Repair Description	Labor Op Code	Op Time	Replacement P/N	Qty.
Spo. (SL) 2.0L T	R	23060 2G400	0	(PI1803X1) 2.0L T-GDI 2WD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Pass	180143RD	7.7 M/H	21111 2GK60QQK	1
							21111 2GK70QQK	1
							(AT) 23311 25050	7
							(MT) 23231 25200	
							21101 2GK07QQKR	1
				(PI1803X1) 2.0L T-GDI 2WD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Fail, KSDS Wire Harness Install	180143RI	8.3 M/H	21111 2GK60QQK	1
							21111 2GK70QQK	1
							(AT) 23311 25050	7
							(MT) 23231 25200	
							21101 2GK07QQKR	1
							*91400 2T100QQK	1
				(PI1803X1) 2.0L T-GDI AWD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Pass	180143RE	8.1 M/H	21111 2GK60QQK	1
							21111 2GK70QQK	1
							(AT) 23311 25050	7
							(MT) 23231 25200	
							21101 2GK07QQKR	1
				(PI1803X1) 2.0L T-GDI AWD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Fail, KSDS Wire Harness Install	180143RJ	8.7 M/H	21111 2GK60QQK	1
							21111 2GK70QQK	1
							(AT) 23311 25050	7
							(MT) 23231 25200	
							21101 2GK07QQKR	1
							*91400 2T100QQK	1

NOTE: Refer to Warranty Bulletin 2018-14 for details regarding coolant and substitute transportation reimbursement requirements.

***Old part number 91400 2T000QQK has been superseded by new part number 91400 2T100QQK.**

Use sublet code 'X3' with a maximum allowed amount of $19.80 for "ENGINE R&R" engine oil reimbursement.

If the replacement of the Oil Cooler Tube Assembly was required, please manually enter the applicable Oil Cooler Tube Assembly part number to the claim's related parts section.

Dispose of old parts in accordance with local, state, and Federal regulations.

ALL claims for engine or harness replacement without the required diagnostic inspection/results or authorization are subject to claim chargeback/denial without exception.

* NOTICE

VIN inquiry data for this repair is provided for tracking purposes only. Kia retailers should reference PI1803W/X* when accessing the WebDCS system.

Appendix 1 (Warranty Claim Authorization)

Scenario		Description	Action Required
1	Campaign - TSB # PI1803W/X Case for Warranty Authorization **NO INSPECTION**	Wiring Signal Interference Check cannot be completed due to engine seizure or other engine failure (won't run long enough to complete the test)	**TL PWA required for all dealers – Video of condition and WRTY143 form required*** Video requirement examples below are for illustration purposes, individual requirements will vary based upon the condition reported: • Video should be continuous and show the VIN (most convenient VIN plate) and pan to show the engine condition • For engine seizures, attempt to turn over engine with breaker bar in video • For hole in engine block, show hole in video

Appendix 2 (Video Capture & Upload)

Capturing a video is often helpful in assisting the Kia Techline Agent in determining a proper diagnosis strategy. Once a TechLine case is open, the following procedure will guide you through the video capture and upload.

The Chrome™ browser should be used to access the Techline portal. Follow the steps below to clear the default browser if it is other than Chrome™.

For KDS Tab 10.1 Tablets:

1. Select "Settings" from the App Screen.
2. Select the "General" tab at the top.
3. Select "Default Applications".
4. If "Internet" is the default browser, select the CLEAR button.

   If "Chrome" is the default browser, further action is not required.



5. When opening the Techline portal, select "Chrome" and select Always".



For KDS Tab S2 Tablets:

1. Select "Settings" from the App Screen.
2. Select "Applications".
3. Select "Default Applications".



4. Select "Browser app".



5. Ensure "Chrome" is selected.



Setting Your Video Size to "Limit to Email"

1. Select "Camera" from the App Screen.



2. Select the Settings icon.



3. Select the Video Camera icon.



4. Ensure "Limit to email" is selected.



Attaching Video to a Techline Case

1. Open K-Support in the device Chrome™ browser or select the "Techline" button on KDS home page.

   https://ksupport.kiausa.com



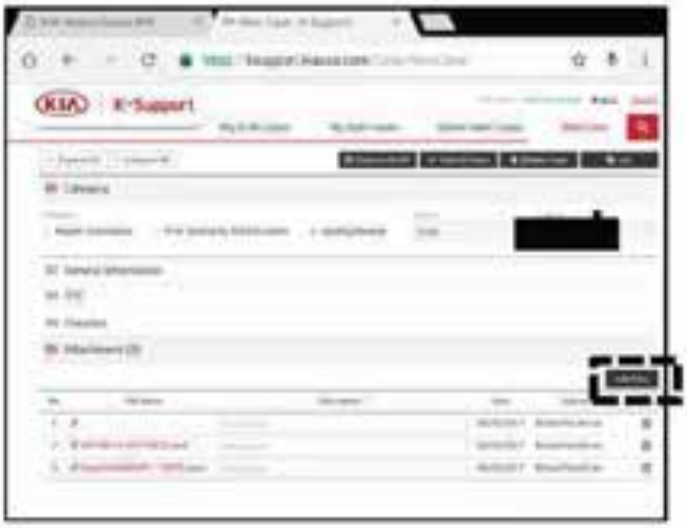
2. Open your existing Techline case for the vehicle requiring a video capture by selecting the case number.



3. Select "Attachment".



4. Select "Add Files".



5. Select "Camcorder" and the video camera will open.



6. Start by recording the VIN. Ensure sun glare is not reflecting off windows or other objects.

   Without stopping the recording, capture the area of the vehicle displaying the issue. i.e.;

   - Engine Noise – record the engine.
   - Hole In Block – record the side of the engine with the damage.
   - Seized Engine – record a technician trying to turn the engine over with a breaker bar.



★ NOTICE

NOTE: Ensure the video size is set to "Limit to email" (see page 32). Only record the VIN and the engine exhibiting the concern. Any additional information will increase the size of the video and make it difficult to upload or download.

7. Stop the video when you captured what is needed. Select "OK" to use this capture or "RETRY" to capture the video again.

8. Ensure a description of the recording. For example, engine knock or smoke from exhaust.

9. Select "Submit Case".



10. Select "Yes" when the confirmation message below appears.

    Note: Selecting anything other than "Yes" will not save the video capture.



Appendix 3 (Engine Noise Adapter Threshold)

Code	Concern	Action
RETEST Code 001	Any measured value out of range / below lower limit	Contact GIT America
RETEST Code 002	Any measured value out of range / over upper limit	Contact GIT America
RETEST Code 003	Difference between minimum and maximum of 2000 RPM or Idle RPM measured value out of range	Perform Retest three (3) more times. If Error Code 003 still displays after the third attempt, contact GIT America.
RETEST Code 004	Difference between minimum and maximum of 2000 RPM and Idle RPM measured value out of range	Perform Retest three (3) more times. If Error Code 004 still displays after the third attempt, contact GIT America.
RETEST Code 005	The adapter/extension cable is unplugged or damaged after test started	Perform Retest three (3) more times. If Error Code 005 still displays after the third attempt, contact GIT America.

GIT America can be contacted at (888) 542-4371.

PE19-004

KIA

TAB 78_TSB I04 A o i
Im o ement_ n Ins e tion

	GROUP	MODEL
KIA	CLI	2012-2015MY Rio (UB)
	NUMBER	DATE
	043	May 2018

TECHNICAL SERVICE BULLETIN

SUBJECT: A/C FAN CONTROL LOGIC IMPROVEMENT AND COOLING FAN/COOLING FAN RESISTOR INSPECTION OR REPLACEMENT

This bulletin provides the procedure to inspect, and if necessary, replace the cooling fan resistor and/or the cooling fan motor, and to upgrade the cooling fan control logic on certain Manual Temperature Control (MTC) equipped 2012-2015MY Rio (UB) vehicles, produced from August 7, 2011 through October 22, 2014. These vehicles may exhibit poor A/C system performance due an inoperative cooling fan, typically related to the vehicle operating in ambient temperatures below 32°F. Follow the procedure outlined in this bulletin to correct the condition.



File Under: <Climate>

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

SUBJECT: A/C FAN CONTROL LOGIC IMPROVEMENT AND COOLING FAN/COOLING FAN RESISTOR INSPECTION OR REPLACEMENT

Inspection Procedure:

★ NOTICE

Before attempting the ECU upgrade Manual Mode ONLY, verify that the radiator cooling fan is operating as designed by following the inspection and/or test/repair procedures outlined in this bulletin.

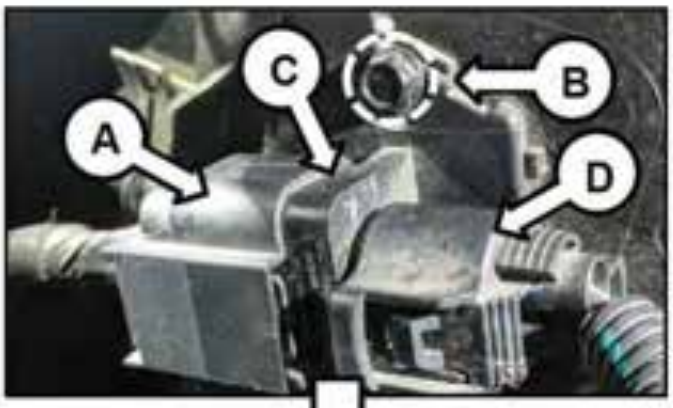
Reference the outline below to test the radiator fan motor operation. Refer to pages 3-4 for component testing information. Repair or replace parts as needed and as outlined on page 8 of this bulletin.

Using the KDS, actuate the fan on Hi and Low Speed, and confirm fan is operating.

- If the fan motor is operating as designed, proceed to upgrade the Air Conditioner Performance Logic Improvement software procedure outlined on pages 5-7.
- If the fan does not operate on Hi Speed, proceed to test the fan motor in Step 3a.
- If the fan does not operate on Low Speed, proceed to test the fan resistor in Step 1.
- Ensure the ground connection is ok by testing the connector outlined on Step 2c.

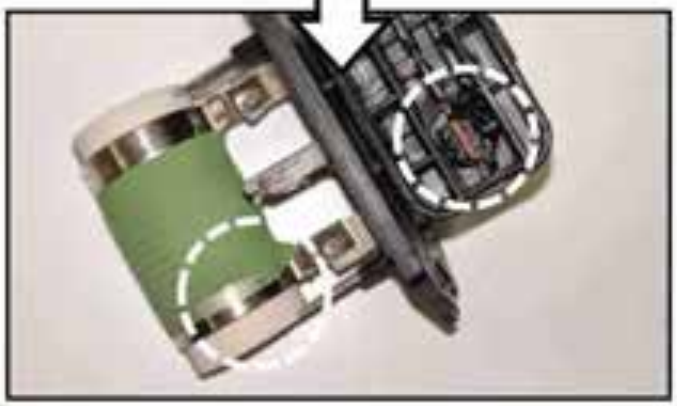
Test/Repair Procedure:

1. Locate and disconnect the radiator fan resistor connector (A) (EGGG42). Loosen the retaining bolt (B) and detach the fan resistor (C) without disconnecting the fan side resistor output connector (D).



★ NOTICE

If the resistor appears to be burned after it is detached, then replace the burned resistor with a new part. (Fan resistor was removed to demonstrate a bad resistor sample.)



SUBJECT: A/C FAN CONTROL LOGIC IMPROVEMENT AND COOLING FAN/COOLING FAN RESISTOR INSPECTION OR REPLACEMENT

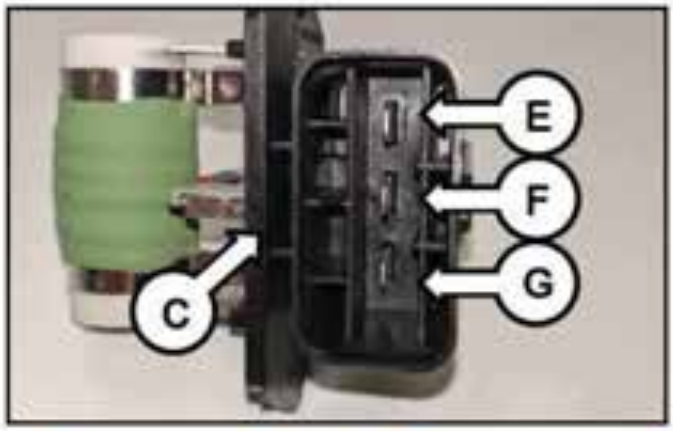
2a. If fan's Low speed was inoperative (INOP) using KDS, reference the fan resistor troubleshooting chart shown.



2b. Test the fan resistor by supplying ground (G) and 12V power separately to prong (E) first and then to prong (F).

Replace the fan resistor if inoperative. (Fan resistor was removed to better illustrate the connections.)

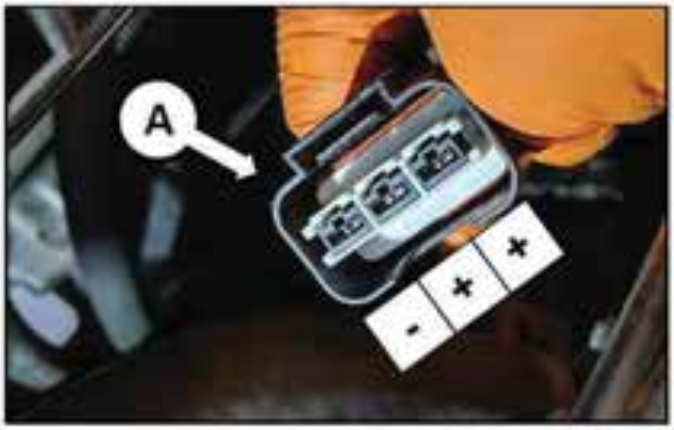
- (+) High Fan Speed (E)
- (+) Low Fan Speed (F)
- (-) Ground (G)

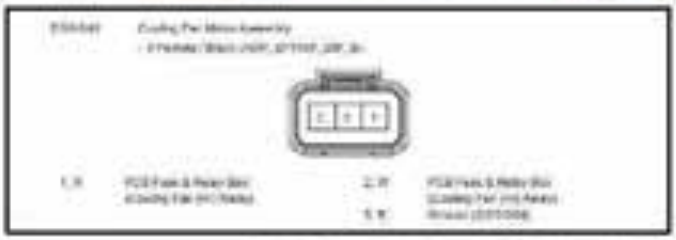


2c. Check the ground connection first by testing the resistor input connector (A) (EGGG42); then check high and low connections for voltage while activating each individually using the KDS.

*** NOTICE**

If there is no power or ground, further diagnosis or repair is required and not covered in this bulletin. File a separate claim if necessary.



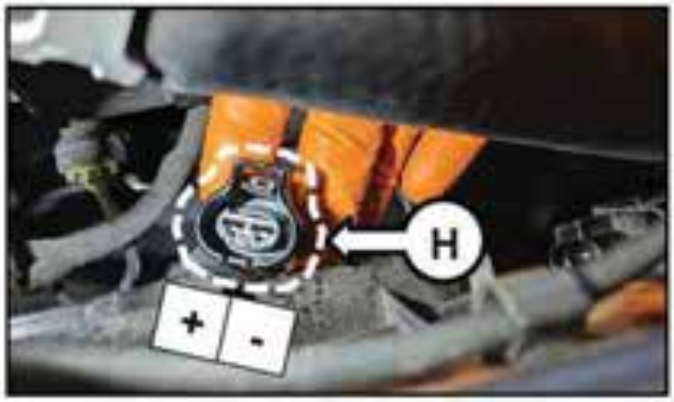


SUBJECT: A/C FAN CONTROL LOGIC IMPROVEMENT AND COOLING FAN/COOLING FAN RESISTOR INSPECTION OR REPLACEMENT

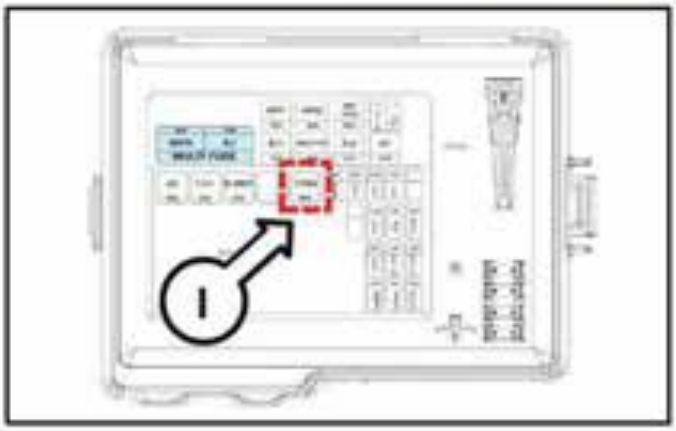
3a. If fan's High speed was inoperative (INOP) using KDS, reference the fan motor troubleshooting chart shown.



3b. Test the fan motor by disconnecting the resistor output connector (H). Supply Ground and 12V power to the fan connector and confirm operation of the fan motor. Replace the cooling fan motor if inoperative.



3c. Check the fuse by inspecting the "Engine Room Relay Box" C/FAN 40A fuse (I), as shown and replace it if needed.



★ NOTICE

If there is no power to C/FAN fuse or fuse fails abruptly, then further diagnosis is required and not covered in this bulletin. File a separate claim if necessary.

SUBJECT: A/C FAN CONTROL LOGIC IMPROVEMENT AND COOLING FAN/COOLING FAN RESISTOR INSPECTION OR REPLACEMENT

ECU Upgrade Procedure:

DO NOT USE AUTO MODE!

The ECU should be reprogrammed in Manual Mode **ONLY** using the KDS download as described in this bulletin.

Upgrade Event Name
337.UB A/C PERFORMANCE LOGIC IMPROVEMENT (MTC)

* NOTICE

- **A fully charged battery is necessary before ECU upgrade can take place. It is recommended that the Midtronics GR8-1299 system be used in ECU mode during charging. DO NOT connect any other battery charger to the vehicle during ECU upgrade.**
- **All ECU upgrades must be done with the ignition key in the 'ON' position.**
- **Be careful not to disconnect the VCI-II connected to the vehicle during the ECU upgrade procedure.**
- **DO NOT start the engine during ECU upgrade.**
- **DO NOT turn the ignition key 'OFF' or interrupt the power supply during ECU upgrade.**
- **When the ECU upgrade is completed, turn the ignition 'OFF' and wait 10 seconds before starting the engine.**
- **ONLY use approved ECU upgrade software designated for the correct model, year.**

ROM ID INFORMATION TABLE:

Upgrade Event #337

Model	EM	TM	IMMO	ECU P/No.	ROM ID	
					Previous	New
UB	ALL	ALL	-	97250 1W060 97250 1W061	FF 08 09 0A 0B 0C	20

To verify the vehicle is affected, be sure to check the Calibration Identification of the vehicle's ECM ROM ID and reference the Information Table as necessary.

Manual Mode ECU Upgrade Passwords

Menu	Password
337.UB MTC : 97250 1W060	1061
337.UB MTC : 97250 1W061	

SUBJECT: A/C FAN CONTROL LOGIC IMPROVEMENT AND COOLING FAN/COOLING FAN RESISTOR INSPECTION OR REPLACEMENT

*** NOTICE**

Prior to performing the ECU upgrade, be sure to check that the KDS is fully charged.

1. Connect the VCI-II to the OBD-II connector, located under the driver's side of the instrument panel.



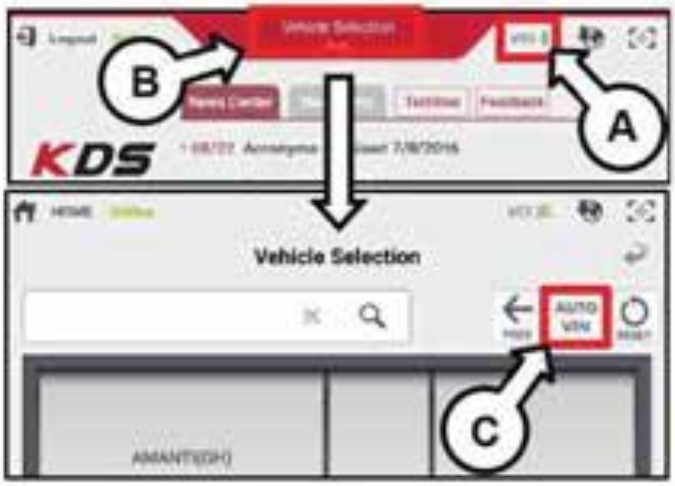
*** NOTICE**

The ECU upgrade function on KDS operates wirelessly. It is not necessary to perform the upgrade via USB cable.

2. With the ignition ON, turn ON the KDS tablet. Select **KDS** from the home screen.



3. Confirm communication with VCI (A) and then configure the vehicle (B) using the **AUTO VIN** (C) feature.



4. Select **ECU Upgrade**.



5. The KDS will check the server for recently uploaded Events and then automatically download **Upgrade Event #337.**

★ NOTICE

The vehicle must be identified in Vehicle Selection to download an Event for that vehicle.



KDS screenshot shown above is for demonstration purposes only. Events shown in screenshot are not applicable to this bulletin.

6. Select **Manual Mode**.

⚠ CAUTION

Do NOT attempt to perform in Auto Mode. Follow the instructions given on the KDS in Manual mode.



7. Select the **AIRCON** system under the System selection menu. Select **Upgrade Event #337** and select **Upgrade** to continue.

8. Select the appropriate control unit part number with reference to the ROM ID Information Table on page 5, and select **OK**.

9. Enter the appropriate password from the Manual Mode password table on Page 5 and select **OK**.

10. The upgrade will begin and the progress of the upgrade will appear on the bar graph.

11. When instructed on the KDS, turn the ignition **OFF** for ten (10) seconds then back on. Touch **OK** to continue.

12. Once the upgrade is complete, touch **OK** to finalize the procedure.

13. When prompted, select **YES** to check for Diagnostic Trouble Codes (DTC) and erase any DTCs stored such as EPS, ESC, and TPMS that may have been set during the upgrade.

14. Start the engine to confirm proper operation of the vehicle.

SUBJECT: A/C FAN CONTROL LOGIC IMPROVEMENT AND COOLING FAN/COOLING FAN RESISTOR INSPECTION OR REPLACEMENT

AFFECTED VEHICLE RANGE:

Model	Production Date Range
Rio (UB)	August 8, 2011 through October 22, 2014

REQUIRED PART:

Part Name	Part Number	Figure
Fan Resistor	25385 4L000	
(5-Door) Radiator Fan Motor 140W	25386 1R140	
(4-Door) Radiator Fan Motor 180W	25386 1R220	

WARRANTY INFORMATION:
N Code: I42 C Code: ZZ3

Claim Type	Causal P/N	Qty.	Repair Description	Labor Op Code	Op Time	Replacement P/N	Qty.
W	97250 1W060	0	Inspection and MTC Logic Improvement	97250F06	0.3 M/H	N/A	0
	25386 1R140 25386 1R220	1	Inspection, Diagnose, Cooling Fan Replacement, and MTC Logic Improvement	97250F07	1.0 M/H	N/A	0
	25385 4L000	1	Inspection, Diagnose, Fan Resistor Replacement, and MTC Logic Improvement	97250F08	0.5 M/H	N/A	0

NOTE: For the reimbursement of 1 Quart of coolant use sublet code 'X1' with a maximum amount of $10.70.

PE19-004

KIA

TAB 79_S 174_TSB_ t_ To ublis on 7-1-19

DRAFT 2

	GROUP	MODEL
KIA	**Safety Recall**	**2011-2012MY Sportage (SL)**
	NUMBER	DATE
	SC174	**June 2019**

SAFETY RECALL CAMPAIGN

SUBJECT: SL THETA II 2.4 MPI ENGINE OIL PAN INSPECTION AND REPLACEMENT

This bulletin provides the service procedure, on some 2011-2012 MY Sportage (SL) vehicles produced from June 11, 2010 through February 13, 2012 equipped with Theta II 2.4 MPI engines, to replace the Oil Pressure Switch ("OPS") with an improved one that will detect the early onset of oil leaking. In addition, dealers will inspect the oil pan for any oil leaks according to the procedure described in this TSB and, if an oil leak is found, the oil pan will be replaced. The oil pan may have been improperly sealed during engine production. As a result, engine oil may leak from the oil pan. If the vehicle is continued to be driven with an unrepaired oil leak, damage to the engine can occur and the vehicle could stall while in motion. An engine stall can increase the risk of a crash. There is also the possibility that a fire could occur, increasing the risk of injury.

Should a customer bring his/her vehicle to the dealer with the check engine (malfunction indicator) light and/or the oil pressure warning light illuminated and the cause is determined to be oil leaking from the oil pan, verify that the vehicle is included in this safety recall campaign.

NOTE: The updated oil pressure switch is designed to detect low oil volume and prevent potential engine damage or failure due to an engine oil leak. The engine oil should be changed if the oil pressure light comes on after the updated oil pressure switch is installed.

*** NOTICE**

There is no charge to the vehicle owner for this repair. Under applicable law, you may not sell or otherwise deliver any affected vehicle until it has been repaired pursuant to the procedures set forth in this bulletin.

*** NOTICE**

To assure complete customer satisfaction, always remember to refer to WebDCS Warranty Coverage (validation) Inquiry Screen (Service → Warranty Coverage → Warranty Coverage Inquiry) for a list of any additional campaigns that may need to be performed on the vehicle before returning it to the customer.

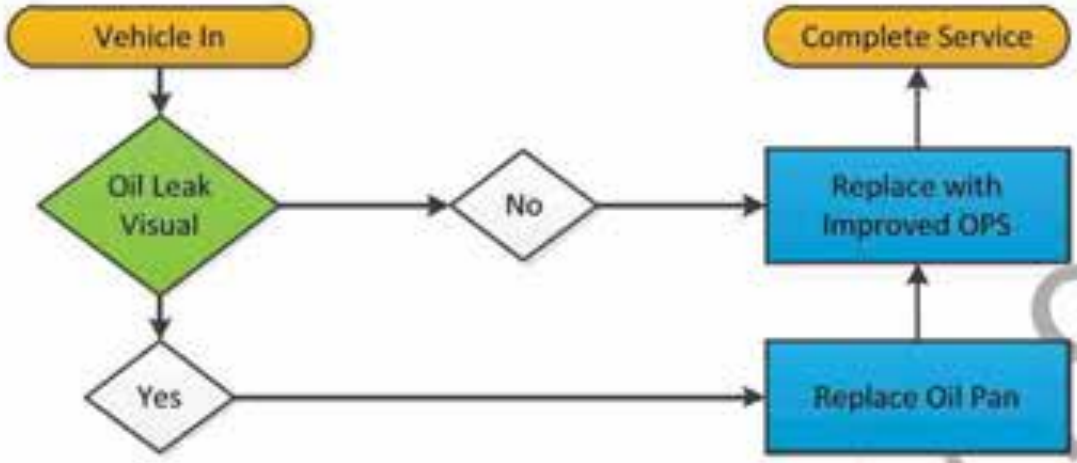
File Under: <Service Campaign>

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

Do not publish prior to

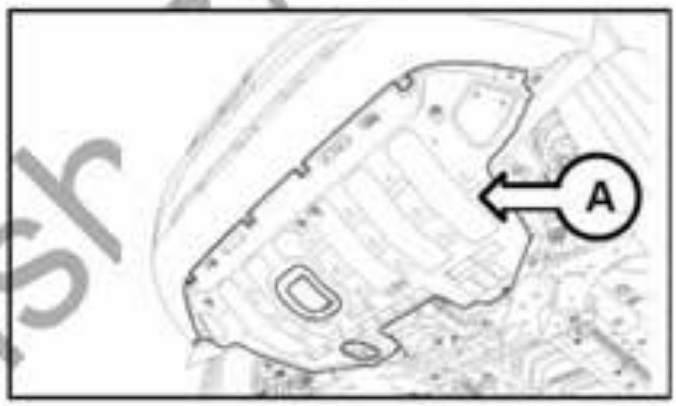
SUBJECT: SL THETA II 2.4 MPI ENGINE OIL PAN INSPECTION AND REPLACEMENT (SC174)

Flowchart:



Engine Oil Leak Inspection Procedure:

1. Raise vehicle on a lift and then remove the engine under cover (A).



2. Inspect the oil pan area for any oil leak. Sample photos are shown on the right.





Follow the table below for the recommended procedure:

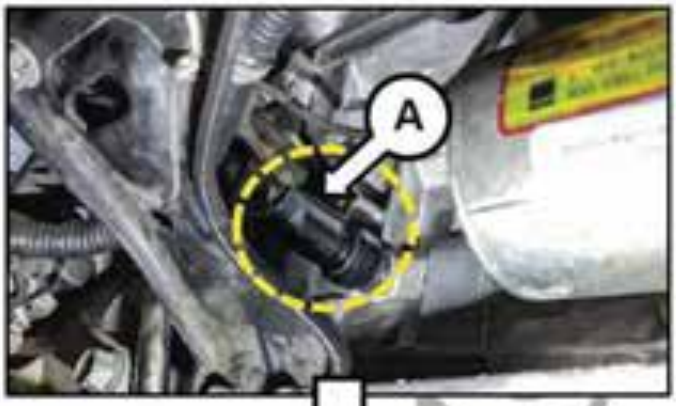
Inspection Result	Action
No oil leaking	Replace the OPS only **(page 3)**
Oil leak visible	Replace both the OPS and Oil Pan. **(pages 3 and 4)**

To publish 7/17/19

SUBJECT: SL THETA II 2.4 MPI ENGINE OIL PAN INSPECTION AND REPLACEMENT (SC174)

Oil Pressure Switch (OPS) Replacement Procedure:

1. Disconnect the OPS connector (A).



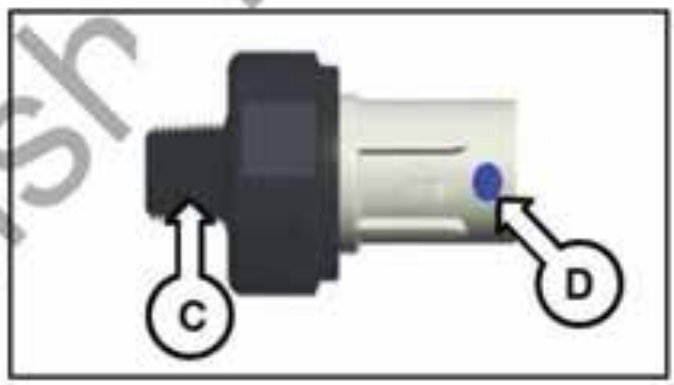
★ IMPORTANT

Be careful not to damage the connector when disconnecting.

2. Using a 24mm wrench or deep socket, remove the existing OPS (B) switch.



3. Apply a small amount of threadlocker (Permatex 59214) evenly to the threads (C) of the new OPS.



Note: The improved OPS, if ordered before August 1, 2019, may have a blue marking (D).

Tightening torque for OPS:
5.8 - 8.7 lb.ft (7.8 - 11.8 N.m, 0.8 - 1.2 kgf.m)

4. Install the new OPS and torque to specification and ensure the OPS connector is properly connected.

5. If the oil pan does not require replacement, reinstall all removed components in the reverse order of removal. Verify no leak exists and ensure engine oil is at the proper level.

   If the oil pan requires replacement as a result of the Engine Oil Leak Inspection procedure on page 2, proceed to the oil pan replacement procedure on page 4.

★ NOTICE

If the oil pressure light comes on after the new oil pressure switch is installed, the engine oil should be changed.

To publish

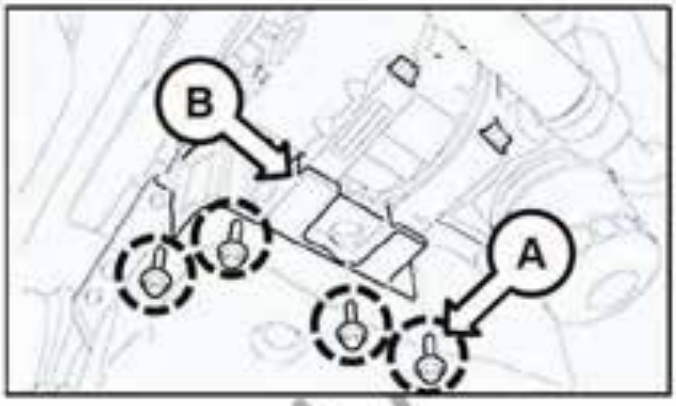
SUBJECT: SL THETA II 2.4 MPI ENGINE OIL PAN INSPECTION AND REPLACEMENT (SC174)

Oil Pan Replacement Procedure:

1. Drain the engine oil.

2. Loosen and remove the four (4) A/C compressor bracket retaining bolts (A) and then remove the A/C compressor bracket (B).

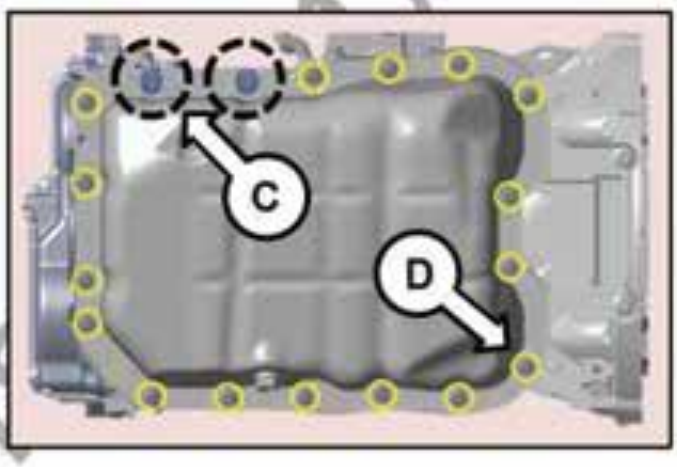
   Tightening torque for bolts (A):
   14.5 - 17.4 lb.ft (19.6 - 23.5 N.m, 2.0 - 2.4 kgf.m)



3. Carefully loosen and remove the oil pan retaining bolts (C) and (D). Save one (1) retaining bolt (D) to be reused and discard the rest.

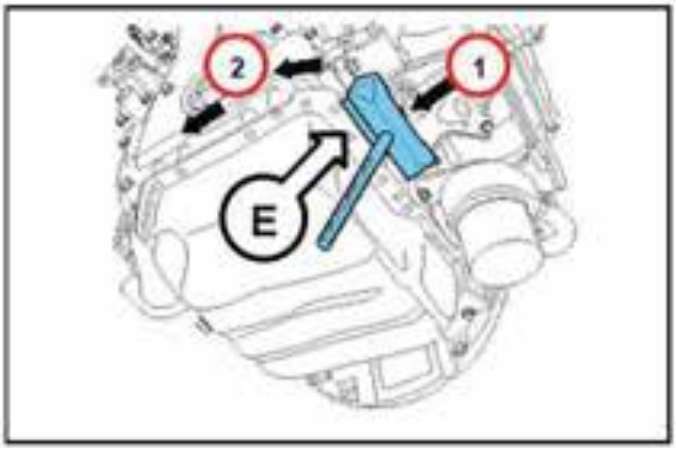
   Tightening torque for bolts (C) (x2):
   19.5 - 22.4 lb.ft (26.5 - 30.4 N.m, 2.7 - 3.1 kgf.m)

   Tightening torque for bolts (D) (x17):
   7.2 - 8.7 lb.ft (9.8 - 11.8 N.m, 1.0 - 1.2 kgf.m)



4. Using SST 09215 3C000 (E) and a mallet, carefully separate the oil pan from the ladder frame. Work around the oil pan along the arrow direction for more than 2/3 of the oil pan adhesive face and then remove it from the ladder frame.

   Be careful **not** to tap hard or twist the SST when removing as it may damage SST.



*** NOTICE**

Use an old oil pan retaining bolt to hold up the pan during the sealant separation to prevent the pan from falling. Be sure to work around the retaining bolt.

Not Publish

SUBJECT: SL THETA II 2.4 MPI ENGINE OIL PAN INSPECTION AND REPLACEMENT (SC174)

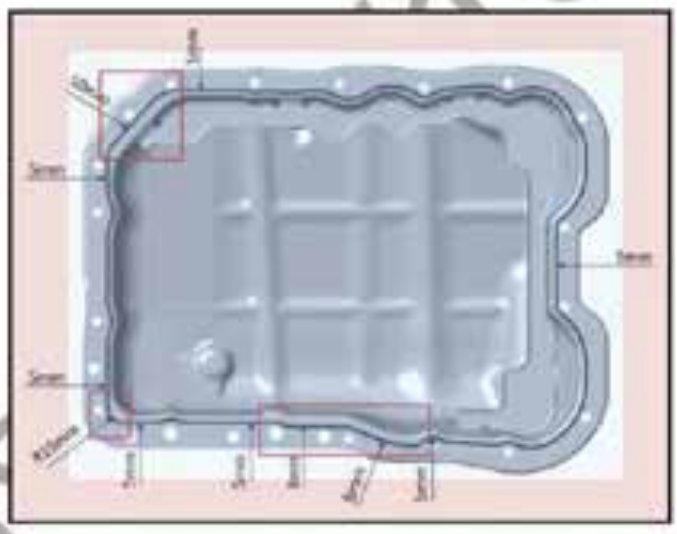
5. Remove any remaining silicone from the engine block and timing chain cover surface where the oil pan was sealed and clean up any oil residue.



★ NOTICE

Thoroughly clean the surface using a clean shop towel and degreaser to remove any contaminants such as oil and ensure a clean surface for proper sealing of the oil pan.

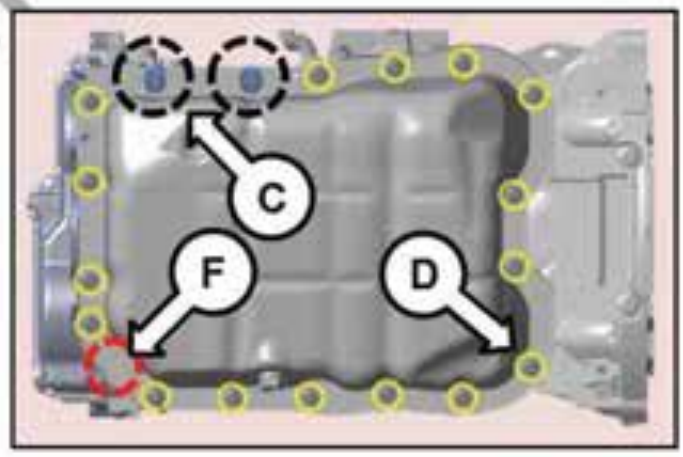
6. Apply sealant (UM016 CH123) to the new oil pan. **Note**: The oil pan must be installed within five (5) minutes after application of sealant.



★ NOTICE

When applying sealant, the sealant must not protrude into the inside of the oil pan. Photo shown on the right provides the recommended thickness of the sealant bead.

7. Carefully align and install the new oil pan with sealant applied. *Sixteen (16) new retaining bolts (D) and two (2) new retaining bolts (C) are supplied with the oil pan kit and must be used. Uniformly tighten the bolts in several passes before torqueing them to specifications.



Tightening torque for bolts (C) (x2):
19.5 - 22.4 lb.ft (26.5 - 30.4 N.m, 2.7 - 3.1 kgf.m)

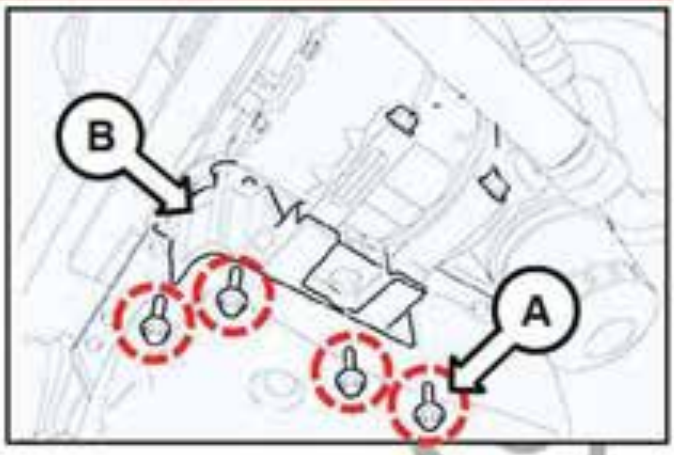
Tightening torque for bolts (D) (x16):
7.2 - 8.7 lb.ft (9.8 - 11.8 N.m, 1.0 - 1.2 kgf.m)

★ NOTICE

***The oil pan kit only comes with 16 new oil pan bolts (D). Oil pan bolt hole (F) can be secured with an old retaining bolt saved in step 3 of this procedure.**

Not Public

8. Install the A/C bracket (B) and secure with the four (4) new A/C bracket retaining bolts (A), supplied with the oil pan kit.



Tightening torque for bolts:
14.5 - 17.4 lb.ft (19.6 - 23.5 N.m, 2.0 - 2.4 kgf.m)

*** NOTICE**

Reuse the A/C bracket but do not reuse the A/C bracket bolts. New bolts are supplied with kit.

9. Ensure the oil drain plug is torqued to specification.



Tightening torque for plug:
25.3 - 32.5 lb.ft (34.3 - 44.1 N.m, 3.5 - 4.5 kgf.m)

10. Reinstall all removed components in the reverse order of removal.

11. Refill the engine oil to specification and ensure proper installation of the engine oil filler cap.

Capacity - Oil Pan:
4.65 U.S. Qt., (1.16 U.S. Gal., 4.4 Liters, 3.87 Imp. Qt.)

12. Start the engine and allow it to warm up. After engine warm up, turn engine off and wait five (5) minutes to check the engine oil level.

*** NOTICE**

Oil level should be between the "L" and "F" marks on the dipstick. If oil level is still low, add oil up to the "F" mark.

13. Verify no leaks exist at the oil pan area and ensure proper operation of the vehicle.

For public

SUBJECT: SL THETA II 2.4 MPI ENGINE OIL PAN INSPECTION AND REPLACEMENT (SC174)

AFFECTED VEHICLE RANGE:

Model	Production Date Range
Sportage (SL)	June 11,2010 through February 13, 2012

REQUIRED TOOL:

Tool Name	Part Number	Figure
Oil Pan Remover (SST)	09215 3C000	

REQUIRED PART:

Part Name	Part Number	Figure	Notes
Engine Oil Pan Kit	21510 2G500QQK		Kit includes: 1 Oil Pan (with drain plug) 2 Large Oil Pan Bolts 16 Small Oil Pan Bolts 4 A/C Comp. Bracket Bolts
Oil Pressure Switch (OPS)	94750 37200QQK		Will have a blue mark if ordered before August 1, 2019.
RTV Silicone Gasket Maker	UM016 CH123		Order through Kia Chemicals
Permatex High Temp Thread Sealant	59214		Locally sourced

To publish 7/1/19

SUBJECT: SL THETA II 2.4 MPI ENGINE OIL PAN INSPECTION AND REPLACEMENT (SC174)

WARRANTY INFORMATION:
N Code: N99 C Code: C99

Claim Type	Causal P/N	Qty.	Repair Description	Labor Op Code	Op Time	Replacement P/N	Qty.
R	##### #####	0	(SC174) Engine Oil Leak Inspection & OPS Replacement	191022R0	0.6 M/H	94750 37200QQK	1
		0	(SC174) Engine Oil Leak Inspection & OPS and Oil Pan Replacement	191022R1	1.2 M/H	21510 2G500QQK	1
						94750 37200QQK	1
		0	(SC174) Engine Oil Leak Inspection & Oil Pan Replacement	191022R2	1.1 M/H	21510 2G500QQK	1

Note: Use sublet code 'XX' with a maximum allowed amount of $xx.xx for engine oil.

★ NOTICE

VIN inquiry data for this repair is provided for tracking purposes only. Kia retailers should reference SC174 when accessing the WebDCS system.

To publish 7/1/19

PE19-004

KIA

TAB 82_ Assessments in l

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TAB 82
PE19-004

	ODI NO.	REPORT DATE	INCIDENT DATE	CUSTOMER NAME	VIN	MODEL	MY	KIA ASSESSMENT
1	[redacted]	7/7/2010	7/7/2010	[redacted]	5XYKU4A22B	SORENTO	2011	See TAB 14 of Kia's response to DP18-003 Non-Crash Fires (MY) 2011-2014 Kia Optima and Sorento dated October 31, 2018.
2		08/16/2010	08/02/2010		KNDJT2A26A7	SOUL	2010	In VOQ dated 8/16/2010, customer alleged an occurrence of "electrical fire in the door panel while driving". Towed to dealer. Dealer discovered led light shortened and melted in door panel and replaced the door panel. No injuries reported. Dealer contacted KMA Consumer Affairs (CA) on 7/21/2010 reporting customer had an issue with mood lights. KMA contacted customer. Customer smelled burning odor coming from the passenger side. Vehicle was towed to dealer, who stated "mood light around speaker grill in driver's door found to be melted." Dealer completed the repairs. KMA provided goodwill reimbursement check or one vehicle payment. Vehicle within the scope of recall 10v388.
3		8/23/2010	7/20/2010		KNDJT2A29A7	SOUL	2010	In VOQ dated 8/23/2010, customer reported seeing smoke coming out passenger door panel while driving. Dealer stated cause due to unplugged window motor. Vehicle repaired and within 1 mile of driving smoke "poured out of passenger side door panel." Vehicle driven to parking lot and speakers caught on fire. No injuries reported. Customer contacted KMA Consumer Affairs (CA) on 7/20/2010 and reported passenger side door handle was emitting smoke. Vehicle towed to dealer. Dealer diagnosed that the window motor caused the smoke due to disconnected part. Vehicle repaired, and customer drove vehicle for about 1/2 mile when the passenger door began emitting smoke again and then caught on fire. KMA offered customer replacement vehicle or cost of repairs. Customer chose to have vehicle repaired. KMA also provided goodwill compensation. Cause appears to be due to dealer repair error. Vehicle within the scope of 10v388.
4		8/30/2010	8/5/2010		KNDJT2A28A7	SOUL	2010	In VOQ dated 8/30/2010, customer alleged "the LED lights inside vehicle caught on fire." Damage to inside door panel and speakers. Vehicle was towed to dealer, who diagnosed "the light harness wires melted." Vehicle repaired under warranty. No injuries reported. On 8/5/2010, dealer contacted KMA Consumer Affairs (CA) stating that customer alleged vehicle caught on fire with white smoke coming from dashboard. Dealer's initial inspection revealed no signs of burning, melting, or smoke. Subsequent inspection showed melting of the speaker's light wiring harness in the door panel. KMA provided customer with replacement vehicle. Issue addressed through Recall 10v388.
5		10/11/2010	9/1/2010		KNDJT2A28A7	SOUL	2010	In VOQ dated 10/11/2010, customer alleges daughter noticed smoke from garage where vehicle was parked prior to discovering fire that destroyed car and garage. Customer states "investigation found it was the Kia that started on fire." Incident alleged on 9/1/10. No injuries reported. Customer never contacted Kia. Kia was not given an opportunity to inspect this vehicle and thus a determination of the cause of fire could not be made.

TAB 82
PE19-004

	ODI NO.	REPORT DATE	INCIDENT DATE	CUSTOMER NAME	VIN	MODEL	MY	KIA ASSESSMENT
6	[redacted]	10/25/2010	8/17/2010	[redacted]	KNDJT2A21A7[redacted]	SOUL	2010	In VOQ dated 10/11/2010, customer alleges front bumper falling off and anti-lock brakes locked-up. Customer indicates dealer repaired the brakes. Customer mentioned various other issues with the vehicle including "the brakes did have small fire when moved it not realizing it was the brakes." Incident date identified as 8/17/10. No injuries alleged. Customer contacted KMA Consumer Affairs (CA) on 8/12/2010 regarding bumper issue but never alleges brake fire. KMA offered customer to repair the front bumper and goodwill compensation. CA contacted again on 9/20/2010 re the brakes lock-up allegations but again, no mention of brake fire. Lock-up issue repaired by dealer. No indication vehicle fire or other thermal event ever occurred.
7	[redacted]	12/15/2010	12/12/2010		5XYKT4A12BG[redacted]	SORENTO	2011	In VOQ dated 12/15/2010, customer reported air conditioner shut off, vehicle made a grinding noise, check engine lights illuminated, and "smoke came from under the hood." Dealer advised customer that engine needs to be replaced. No injuries reported. Dealer contacted KMA Consumer Affairs (CA) on 12/14/2010. Dealer diagnosed the vehicle and stated "heater hose at engine blew off and lost all coolant. Has no or little compression and bad oil leak from unknown origin." No sign of fire. Dealer replaced engine. KMA reimbursed a car payment for inconvenience and offered field tech inspection after repairs completed. Smoke likely caused by oil leaking onto hot engine components.
8	[redacted]	5/3/2011	4/27/2011		5XYKT3A15BG[redacted]	SORENTO	2011	See TAB 14 of Kia's response to DP18-003 Non-Crash Fires (MY) 2011-2014 Kia Optima and Sorento dated October 31, 2018.
9	[redacted]	7/14/2011	7/12/2011		KNDJT2A22A7[redacted]	SOUL	2010	See TAB 12 of Kia's response to DP18-003 Non-Crash Fires (MY) 2010-2015 Kia Soul dated November 16, 2018.
10	[redacted]	10/11/2011	07/18/2011		5XYKT4A24BG[redacted]	SORENTO	2011	See TAB 14 of Kia's response to DP18-003 Non-Crash Fires (MY) 2011-2014 Kia Optima and Sorento dated October 31, 2018.
11	[redacted]	10/12/2011	07/12/2011		KNDJT2A22A7[redacted]	SOUL	2010	See TAB 12 of Kia's response to DP18-003 Non-Crash Fires (MY) 2010-2015 Kia Soul dated November 16, 2018.
12	[redacted]	11/28/2011	11/27/2011		KNDJT2A12B7[redacted]	SOUL	2011	See TAB 12 of Kia's response to DP18-003 Non-Crash Fires (MY) 2010-2015 Kia Soul dated November 16, 2018.
13	[redacted]	12/29/2011	12/24/2011		KNAGN4A60B[redacted]	OPTIMA	2011	See TAB 14 of Kia's response to DP18-003 Non-Crash Fires (MY) 2011-2014 Kia Optima and Sorento dated October 31, 2018.
14	[redacted]	12/29/2011	12/17/2011		KNDJT2A26A7[redacted]	SOUL	2010	See TAB 12 of Kia's response to DP18-003 Non-Crash Fires (MY) 2010-2015 Kia Soul dated November 16, 2018.
15	[redacted]	2/9/2012	1/9/2012		KNDJT2A26B7[redacted]	SOUL	2011	See TAB 12 of Kia's response to DP18-003 Non-Crash Fires (MY) 2010-2015 Kia Soul dated November 16, 2018.
16	[redacted]	5/18/2012	5/18/2012		[redacted]	SOUL	2012	See TAB 12 of Kia's response to DP18-003 Non-Crash Fires (MY) 2010-2015 Kia Soul dated November 16, 2018.

TAB 82
PE19-004

	ODI NO.	REPORT DATE	INCIDENT DATE	CUSTOMER NAME	VIN	MODEL	MY	KIA ASSESSMENT
17	[redacted]	09/24/2012	08/18/2012	[redacted]	KNDJT2A22A7[redacted]	SOUL	2010	In VOQ dated 9/24/2012, customer reported that while driving on freeway, "all four brakes activated without brake being pressed[,] vehicle decelerated. . . and driver's side front brake caught on fire." Incident occurred on 8/18/12. No injuries reported. Customer contacted KMA Consumer Affairs (CA) on 9/24/2012 reporting incident. Dealer found brake fluid leaking from master cylinder. Dealer replaced the brake system, including the master cylinder and the power brake booster, and changed the pads and rotors. A month later, customer alleged brake lock-up again but no fire. Dealer replaced the brake switch and calipers to complete the repairs. Leaking fluids likely caused alleged fire.
18	[redacted]	12/03/2013	12/27/2012		KNDJP3A54E7[redacted]	SOUL	2014	See TAB 12 of Kia's response to DP18-003 Non-Crash Fires (MY) 2010-2015 Kia Soul dated November 16, 2018.
19	[redacted]	3/4/2014	2/28/2014		5XYKT3A67EG[redacted]	SORENTO	2014	In VOQ dated 3/4/2014, customer noticed "a strong burning odor emitted inside" vehicle, while at a complete stop. Customer moved vehicle to roadside and saw "small flames ignited from the rear trailer hitch wiring harness and driver's side tail light." No injuries reported. The trailer hitch was installed 20 days prior to incident. Dealer contacted KMA Consumer Affairs (CA) on 3/3/2014 reporting trailer fire. Insurer's investigator determined that fire started at tow hitch module installed by dealer. Subsequent investigations determined dealer attempted to install tow hitch module on 11/2/13 but could not get power going to trailer—2nd hitch installed by dealer on 2/8/14. Incident occurred on 2/28/14. KMA engineers reviewed photos provided by dealer on 3/14/2014 and determined that "poor electrical grounds caused high electrical resistance and overloaded the circuit" causing overheating and thus, fire. Kia provided customer with goodwill reimbursement for rental vehicle used during KMA's investigation. Cause likely due to dealer installation .
20	[redacted]	03/16/2014	03/04/2014		KNAGR4A60B[redacted]	OPTIMA	2011	See TAB 14 of Kia's response to DP18-003 Non-Crash Fires (MY) 2011-2014 Kia Optima and Sorento dated October 31, 2018.
21	[redacted]	05/09/2014	05/03/2014		5XXGN4A73C[redacted]	OPTIMA	2012	See TAB 14 of Kia's response to DP18-003 Non-Crash Fires (MY) 2011-2014 Kia Optima and Sorento dated October 31, 2018.
22	[redacted]	07/07/2014	06/14/2013		KNDJT2A59C7[redacted]	SOUL	2012	See TAB 12 of Kia's response to DP18-003 Non-Crash Fires (MY) 2010-2015 Kia Soul dated November 16, 2018.
23	[redacted]	08/18/2014	08/17/2014		KNDJN2A23E[redacted]	SOUL	2014	See TAB 12 of Kia's response to DP18-003 Non-Crash Fires (MY) 2010-2015 Kia Soul dated November 16, 2018.
24	[redacted]	09/26/2014	08/14/2014		KNAGM4A72[redacted]	OPTIMA	2011	In VOQ dated 9/26/2014, customer states that the illumination coming from headlight was extremely dim. Customer drove to dealer, who allegedly determined that "both head lamps overheated which caused the reflector to melt". No injuries reported. Customer contacted KMA Consumer Affairs (CA) on 9/18/2014 seeking repair assistance since only 6K miles past warranty. Dealer inspected vehicle reporting "headlight lenses do not look melted, they just look misshapen and they are not letting light out properly." Dealer offered repair assistance to customer. KMA declined to assist with out-of-warranty repairs. The presence of a thermal event is unclear. Complaint related to cost of repair.

	ODI NO.	REPORT DATE	INCIDENT DATE	CUSTOMER NAME	VIN	MODEL	MY	KIA ASSESSMENT
25		09/26/2014	09/11/2014		5XXGR4A64CG	OPTIMA	2012	In VOQ dated 9/26/2014, customer reported the engine stalled while vehicle was moving 70mph. Vehicle was towed to dealer, who diagnosed that the starter and fuses "were completely burnt". The parts were repaired. Vehicle subsequently failed to start, and dealer determined that engine needed to be replaced. No injuries reported. Customer contacted KMA Consumer Affairs (CA) on 9/8/2014 reporting that "vehicle turned itself off" while driving 70 mph on freeway. Customer safely exited the traffic. Electrical smell was present but "there was no smoke or fire". Dealer inspected the car and found engine sludge. Dealer advised to replace the fuse box and starter. KMA provided customer with alternative transportation during diagnostic period. KMA requested photos and maintenance records. Customer did not have proof of maintenance as he did self-maintenance. KMA reviewed the photos and concluded that the sludge was contributing factor to the issue.
26		10/16/2014	10/12/2014		KNAGN4A61B	OPTIMA	2011	See TAB 14 of Kia's response to DP18-003 Non-Crash Fires (MY) 2011-2014 Kia Optima and Sorento dated October 31, 2018.
27		11/28/2014	11/23/2014		5XYKTDA27BG	SORENTO	2011	See TAB 14 of Kia's response to DP18-003 Non-Crash Fires (MY) 2011-2014 Kia Optima and Sorento dated October 31, 2018.
28		03/04/2015	02/19/2015		5XXGR4A67D	OPTIMA	2013	See TAB 14 of Kia's response to DP18-003 Non-Crash Fires (MY) 2011-2014 Kia Optima and Sorento dated October 31, 2018.
29		03/09/2015	02/06/2015		KNDJN2A28E7	SOUL	2014	See TAB 12 of Kia's response to DP18-003 Non-Crash Fires (MY) 2010-2015 Kia Soul dated November 16, 2018.
30		03/13/2015	03/02/2015		5XYKT3A17BG	SORENTO	2011	See TAB 14 of Kia's response to DP18-003 Non-Crash Fires (MY) 2011-2014 Kia Optima and Sorento dated October 31, 2018.
31		03/27/2015	03/25/2015		5XYKWDA28C	SORENTO	2012	See TAB 14 of Kia's response to DP18-003 Non-Crash Fires (MY) 2011-2014 Kia Optima and Sorento dated October 31, 2018.
32		04/14/2015	04/13/2015		5XXGR4A66D	OPTIMA	2013	See TAB 14 of Kia's response to DP18-003 Non-Crash Fires (MY) 2011-2014 Kia Optima and Sorento dated October 31, 2018.
33		05/06/2015	02/21/2015		5XXGM4A7XD	OPTIMA	2013	See TAB 14 of Kia's response to DP18-003 Non-Crash Fires (MY) 2011-2014 Kia Optima and Sorento dated October 31, 2018.
34		06/02/2015	01/13/2015		5XYKTCA11BG	SORENTO	2011	In VOQ dated 6/2/2015, customer stated that, on multiple occasions, "the low beam head lights failed to illuminate and the wires around both headlights melted." Vehicle was taken to dealer, who replaced the headlights. The issue persisted. Incident occurred on 1/13/15. No injuries reported. Customer contacted KMA Consumer Affairs (CA) on 1/7/2015 stating that there is "funny smell coming from the car" and "half of the headlight plug melted." KMA advised customer to take vehicle to dealer for diagnosis. Five months later, customer contacted KMA reporting that they replaced headlights with aftermarket light bulbs, but the issue persisted. Customer sought assistance with repairs. KMA advised customer multiple times to take vehicle to dealer for diagnosis. No further contact by customer.
35		11/02/2015	10/30/2015		5XYKTDA69DG	SORENTO	2013	See TAB 14 of Kia's response to DP18-003 Non-Crash Fires (MY) 2011-2014 Kia Optima and Sorento dated October 31, 2018.
36		06/23/2015	06/17/2015		5XYKT3A65EG	SORENTO	2014	See TAB 14 of Kia's response to DP18-003 Non-Crash Fires (MY) 2011-2014 Kia Optima and Sorento dated October 31, 2018.

	ODI NO.	REPORT DATE	INCIDENT DATE	CUSTOMER NAME	VIN	MODEL	MY	KIA ASSESSMENT
37	[redacted]	06/30/2015	06/29/2015	[redacted]	KNDJN2A25E7	SOUL	2014	See TAB 12 of Kia's response to DP18-003 Non-Crash Fires (MY) 2010-2015 Kia Soul dated November 16, 2018.
38		08/14/2015	07/31/2015		5XYKTDA63DG	SORENTO	2013	See TAB 14 of Kia's response to DP18-003 Non-Crash Fires (MY) 2011-2014 Kia Optima and Sorento dated October 31, 2018.
39		10/17/2015	10/16/2015		5XYKTCA16BG	SORENTO	2011	See TAB 14 of Kia's response to DP18-003 Non-Crash Fires (MY) 2011-2014 Kia Optima and Sorento dated October 31, 2018.
40		10/28/2015	10/11/2015		5XYKTCA6XCG	SORENTO	2012	See TAB 14 of Kia's response to DP18-003 Non-Crash Fires (MY) 2011-2014 Kia Optima and Sorento dated October 31, 2018.
41		10/29/2015	09/18/2015		KNAGM4A73B	OPTIMA	2011	See TAB 14 of Kia's response to DP18-003 Non-Crash Fires (MY) 2011-2014 Kia Optima and Sorento dated October 31, 2018.
42		11/09/2015	10/31/2015		KNAGM4A79B	OPTIMA	2011	In VOQ dated 11/9/2015, customer states that while driving 70mph, vehicle "shut down and would not accelerate and the brakes would not function." Customer able to safely moved vehicle to freeway shoulder. Customer reports vehicle emitted smoke and was towed to dealer. Dealer informed customer that engine and starter needed to be replaced. Incident occurred on 10/31/15. No injuries reported. Customer contacted KMA Consumer Affairs (CA) on 11/9/2015. Dealer inspected vehicle and did not find any sign of fire. Dealer stated customer "tried to use her aftermarket remote start to restart the locked engine car, this burnt out her starter." KMA requested photos of any signs of thermal events from dealer and maintenance records from customer. Vehicle was outside of warranty and prior maintenance was not done at Kia dealer. KMA declined to provide assistance toward repairs. Customer was subsequently reimbursed for engine repair under Kia warranty extension program. Thermal event likely related to repeated start events.
43		12/04/2015	11/25/2015		5XYKTDA62DG	SORENTO	2013	See TAB 14 of Kia's response to DP18-003 Non-Crash Fires (MY) 2011-2014 Kia Optima and Sorento dated October 31, 2018.
44		02/04/2016	02/04/2016		5XYKTDA28BG	SORENTO	2011	See TAB 14 of Kia's response to DP18-003 Non-Crash Fires (MY) 2011-2014 Kia Optima and Sorento dated October 31, 2018.
45		02/17/2016	02/16/2016		KNDJP3A53F7	SOUL	2015	In VOQ dated 2/17/2016, customer states that while driving 30 mph, "ice fell onto the windshield and caused the wiper blades to stop functioning." Customer noticed electrical smoke inside vehicle, and after removing the ice, "the vehicle operated as normal." Customer never contacted Kia. Kia was not given an opportunity to inspect this vehicle and thus a determination of the cause of fire could not be made.
46		02/17/2016	12/15/2015		NO VIN INCLUDED	OPTIMA	2014	In VOQ dated 2/17/2016, customer reported "black smoke appeared from the rear" while vehicle was in motion. Customer took vehicle to dealer. Dealer identified "excessive sludge" and was unable to provide permanent repair. KMA has no record of being contacted by customer. Kia was not given an opportunity to inspect this vehicle and thus a determination of the cause of smoke could not be made. Unclear from customer description whether a fire occurred.

	ODI NO.	REPORT DATE	INCIDENT DATE	CUSTOMER NAME	VIN	MODEL	MY	KIA ASSESSMENT
47	[redacted]	07/11/2017	06/30/2017	[redacted]	5XYKT3A62EG[redacted]	SORENTO	2014	In VOQ dated 7/11/2017, customer states son was driving when heard "a knocking noise" and noticed "smoke coming from the rear of the vehicle", the check engine indicator illuminated several times, and tail lights failed without warning. Customer reported that the headlights were previously replaced, but the issue persisted. Vehicle was taken to dealer, who diagnosed "engine had burned oil and needed to be replaced". Dealer was unable to duplicate headlight and tail light concerns. Customer received notice of 17V224 campaign. Customer contacted KMA Consumer Affairs (CA) on 6/26/2017 stating his son was driving the vehicle when vehicle began decelerating and white smoke was coming out of the tailpipe. KMA advised customer of SC147 notice. KMA authorized dealer on 7/11/2017 to replace the engine and, if necessary, the intake manifold. Repairs completed on 8/25/2017.
48		07/12/2017	06/02/2017		5XXGN4A73D[redacted]	OPTIMA	2013	In VOQ dated 7/12/2017, customer states while driving 65pmh, vehicle stalled and "all the lights in the instrument cluster illuminated". Customer restarted vehicle but vehicle died again and would not restart. Customer saw smoke coming from engine compartment but no visible fire. Vehicle was towed to dealer, who diagnosed that starter failed and engine seized. Dealer offered to replace the engine under SC147 free of charge, but customer would be responsible for replacing starter. Customer contacted KMA Consumer Affairs (CA) on 6/6/2017 stating that his vehicle stalled and would not restart. Similar incident occurred two weeks prior, but customer was able to restart vehicle. KMA provided customer with an alternative transportation and authorized replacement of engine and other affected components pursuant to SC147. Starter overheated due to repeat start attempts.
49		07/17/2017	07/01/2017		5XYKT3A14DC[redacted]	SORENTO	2013	See TAB 14 of Kia's response to DP18-003 Non-Crash Fires (MY) 2011-2014 Kia Optima and Sorento dated October 31, 2018.
50		07/26/2017	07/26/2017		5XYKTDA63D[redacted]	SORENTO	2012	In VOQ dated 7/26/2017, customer states that the front light failed without warning. Vehicle was taken to dealer and diagnosed "the lighting housing unit melted and needed to be replaced." Customer contacted KMA Consumer Affairs (CA) on 7/26/2017 requesting goodwill repair assistance for a headlight. Dealer diagnosed that "there is a short in the plug in for the headlight assembly", the assembly needs to be replaced, and "car needs lot of work." Vehicle was more than 30,000 miles outside of warranty. No indication of fire.
51		07/27/2017	07/16/2017		5XYKT4A15DC[redacted]	SORENTO	2013	In VOQ dated, 7/27/2017, customer reports vehicle is "total loss due to engine fire. Oil pan failure. Cause and origin report pending." On 8/4/2017, KMA Consumer Affairs (CA) received subrogation demand letter from customer's insurance company. KMA requested additional documents from insurer for evaluation. KMA made several subsequent requests for documents but never received any documents. No further contact from insurance company or any contact from customer. As a result, an evaluation of cause could not be determined.

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52	[redacted]	08/02/2017	07/30/2017	[redacted]	KNAGR4A64B[redacted]	OPTIMA	2011	See TAB 14 of Kia's response to DP18-003 Non-Crash Fires (MY) 2011-2014 Kia Optima and Sorento dated October 31, 2018.
53		08/03/2017	07/02/2017		5XYKT3A66CG	SORENTO	2012	See TAB 14 of Kia's response to DP18-003 Non-Crash Fires (MY) 2011-2014 Kia Optima and Sorento dated October 31, 2018.
54		08/07/2017	08/05/2017		5XYKT3A61CG	SORENTO	2012	See TAB 14 of Kia's response to DP18-003 Non-Crash Fires (MY) 2011-2014 Kia Optima and Sorento dated October 31, 2018.
55		08/07/2017	01/10/2017		5XYKTDA21DG	SORENTO	2013	In VOQ dated 8/7/2017, customer states that "when vehicle was started, black smoke appeared under the hood and the muffler that emitted through the vents." Vehicle was taken to dealer who diagnosed engine failure and needed to be replaced. Customer contacted KMA Consumer Affairs (CA) on 2/6/2017 stating vehicle is smoking when driven "25 miles". KMA requested maintenance records. Customer provided 3 service receipts for 3-year period. Dealer stated that "infrequent oil change by customer could definitely cause this smoke concern". Dealer inspected vehicle and found excessive sludge. Customer requested KMA to repair engine under warranty. KMA concluded improper care of the vehicle and denied request for repairs. Customer called KMA on 5/30/2017 reiterating problems with the engine and inquiring about Kia's SC147. KMA verified that customer's vehicle did not have any open recalls. Multiple communications between customer and KMA occurred during June, July, and August 2017. No new information provided by customer. KMA's decision stood unchanged. Customer subsequently filed VOQ with NHTSA, and in September 2017.
56		08/15/2017	08/03/2017		5XXGN4A77FG	OPTIMA	2013	See TAB 14 of Kia's response to DP18-003 Non-Crash Fires (MY) 2011-2014 Kia Optima and Sorento dated October 31, 2018.
57		08/16/2017	08/07/2017		KNAGN4A70B	OPTIMA	2011	In VOQ dated 8/16/2017, customer brought vehicle to dealer to perform recall. Dealer did not replace engine as it was "operable". Leaving dealer, customer heard knocking sound and engine stalled. Dealer replaced engine. Customer picked up vehicle and noticed A/C blew heat and smoke appeared from the exhaust. Dealer diagnosed intake manifold also needed to be replaced. Dealer contacted KMA Consumer Affairs (CA) on 8/8/2017 reporting vehicle passed SC147, but as customer was leaving "a rod came off the engine". Dealer provided customer with rental. On the same day, KMA authorized dealer to replace the engine. Customer contacted KMA on 8/15/2017 reporting seeing a lot of smoke coming from the vehicle and A/C blowing warm air. Customer subsequently filed VOQ with NHTSA. Dealer replaced the intake manifold because "it was full of oil", which had to be burned out, and performed courtesy A/C repairs. KMA contacted customer on 9/20/2017 and customer reported vehicle is "running great". Information provided is inconsistent with a fire or other thermal event.
58		08/16/2017	08/10/2017		5XYKT3A13CG	SORENTO	2012	See TAB 14 of Kia's response to DP18-003 Non-Crash Fires (MY) 2011-2014 Kia Optima and Sorento dated October 31, 2018.
59		08/19/2017	08/01/2017		5XXGR4A6XCG	OPTIMA	2012	See TAB 14 of Kia's response to DP18-003 Non-Crash Fires (MY) 2011-2014 Kia Optima and Sorento dated October 31, 2018..

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	ODI NO.	REPORT DATE	INCIDENT DATE	CUSTOMER NAME	VIN	MODEL	MY	KIA ASSESSMENT
60	[redacted]	08/23/2017	07/30/2017	[redacted]	5XXGR4A68CG[redacted]	OPTIMA	2012	In VOQ dated 8/23/2017, customer states that while driving 55 mph, vehicle lost engine power. Customer attempted multiple times to restart the vehicle when noticed smoke coming from engine compartment. Vehicle was towed to dealer, who diagnosed that engine, starter, and battery assembly needed to be replaced. The vehicle was subject to recall 17v224. Customer contacted KMA Consumer Affairs (CA) on 7/24/2017 reporting that engine "quit" while he was driving. Vehicle was subject to SC147. Customer alleged he never received the recall notice. KMA authorized dealer to repair engine and other affected parts due to engine failure. KMA also extended to customer goodwill reimbursement for prior repairs done in connection to the engine issue. Smoking likely caused by customer's multiple attempts to restart vehicle.
61		09/06/2017	08/06/2017		KNDJN2A26F7[redacted]	SOUL	2015	In VOQ dated 9/6/2017, customer states that front headlights failed without warning. Customer inspected vehicle and found that "the plugs were melted" and driver side tail light went out. An independent mechanic diagnosed that "the wiring harness needed to be replaced". Customer contacted KMA Consumer Affairs (CA) on 6/20/2017 stating "something is draining my battery and blew out my headlight". Customer did not visit dealer to address the concerns. On 9/6/2017, customer called KMA alleging that "the headlights melted the plug. The headlights are too bright". KMA arranged service appointment with dealer, but customer never showed up. Despite multiple attempts, KMA was unable to reach customer. As a result, cause of alleged melting could not be determined.
62		09/12/2017	09/07/2017		5XXGN4A70D[redacted]	OPTIMA	2013	In VOQ dated 9/12/2017, states that vehicle lost engine power while driving 60mph. Customer noticed "black smoke and various electrical functions operated independently." Check engine and oil warning signs illuminated. Customer explicitly states no fire occurred during incident. Vehicle was subject to recall 17v224, but customer allegedly never received recall notice. Customer contacted KMA Consumer Affairs (CA) on 9/7/2017 reporting that his vehicle stalled while driving 60mph. Customer alleges when hood was opened, vehicle smoked and emitted an electrical smell. Customer also alleged dealer advised customer he did not receive notice of SC147 because customer was not the original owner. KMA records indicate recall notice was mailed on 5/31/17 and follow up noticed was provided to customer on 10/4/17. Techline authorized to replace engine and other affected parts per 17v224 on 9/7/2017. Customer complaint related to cost of repair. Issue addressed through Recall No. 17v224.
63		09/12/2017	12/06/2016		KNAGM4A75C[redacted]	OPTIMA	2012	See TAB 14 of Kia's response to DP18-003 Non-Crash Fires (MY) 2011-2014 Kia Optima and Sorento dated October 31, 2018.

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	ODI NO.	REPORT DATE	INCIDENT DATE	CUSTOMER NAME	VIN	MODEL	MY	KIA ASSESSMENT
64	[redacted]	09/25/2017	09/05/2017	[redacted]	KNDJP3A57E7 [redacted]	SOUL	2014	In VOQ dated 9/25/2017, customer states was driving from dealer after the valve cover gasket and seatbelt retractor was replaced, applied brakes, but the brake pedal went to the floorboard. Customer was able to stop vehicle, after which it "caught fire without warning". Customer alleged to have sustained injuries that required medical attention. On 9/11/2017, customer contacted KMA Consumer Affairs reporting that after visiting dealer for service repairs, vehicle caught fire while driving on freeway. Customer's insurance completed fire investigation and determined fire was due to dealer's repairs. Customer's insurance rescinded its notice of subrogation. No further contact by customer or insurer.
65		10/05/2017	09/22/2017		5XYKTCA6XDG	SORENTO	2013	See TAB 14 of Kia's response to DP18-003 Non-Crash Fires (MY) 2011-2014 Kia Optima and Sorento dated October 31, 2018.
66		10/27/2017	09/06/2017		5XXGN4A70C	OPTIMA	2012	In VOQ dated 10/27/2017, customer states that "the engine seized while driving on the freeway" causing defrosters and radio to malfunction. Initial contact to KMA Consumer Affairs (CA) made by dealer on 9/22/2017 reporting engine seized in customer's vehicle while driving. KMA contacted customer on 10/6/2017. Customer reported that while driving on highway, engine stalled. Customer pulled over and "there was smoke coming out from under the hood". Vehicle was towed to dealer and engine was replaced per SC147. No indication from information provided that there was a fire.
67		10/31/2017	10/25/2017		KNDJN2A22E7	SOUL	2014	See TAB 12 of Kia's response to DP18-003 Non-Crash Fires (MY) 2010-2015 Kia Soul dated November 16, 2018.
68		11/17/2017	09/01/2017		5XXGN4A76D	OPTIMA	2013	See TAB 14 of Kia's response to DP18-003 Non-Crash Fires (MY) 2011-2014 Kia Optima and Sorento dated October 31, 2018.
69		12/07/2017	12/03/2017		5XXGN4A62C	OPTIMA	2012	See TAB 14 of Kia's response to DP18-003 Non-Crash Fires (MY) 2011-2014 Kia Optima and Sorento dated October 31, 2018.
70		12/18/2017	12/07/2017		KNDJN2A2XF7	SOUL	2015	See TAB 12 of Kia's response to DP18-003 Non-Crash Fires (MY) 2010-2015 Kia Soul dated November 16, 2018.
71		02/04/2018	01/20/2018		KNDJT2A55C7	SOUL	2012	See TAB 12 of Kia's response to DP18-003 Non-Crash Fires (MY) 2010-2015 Kia Soul dated November 16, 2018.
72		02/08/2018	12/10/2017		KNAGM4A75C	OPTIMA	2012	See TAB 14 of Kia's response to DP18-003 Non-Crash Fires (MY) 2011-2014 Kia Optima and Sorento dated October 31, 2018.
73		02/17/2018	01/08/2018		5XYKT3A11BG	SORENTO	2011	See TAB 14 of Kia's response to DP18-003 Non-Crash Fires (MY) 2011-2014 Kia Optima and Sorento dated October 31, 2018.
74		02/21/2018	02/01/2018		5XXGN4A79E	OPTIMA	2014	See TAB 14 of Kia's response to DP18-003 Non-Crash Fires (MY) 2011-2014 Kia Optima and Sorento dated October 31, 2018.
75		02/27/2018	02/19/2018		5XYKWDA21C	SORENTO	2012	See TAB 14 of Kia's response to DP18-003 Non-Crash Fires (MY) 2011-2014 Kia Optima and Sorento dated October 31, 2018.
76		03/05/2018	01/31/2018		5XYKT3A69CG	SORENTO	2012	See TAB 14 of Kia's response to DP18-003 Non-Crash Fires (MY) 2011-2014 Kia Optima and Sorento dated October 31, 2018..
77		03/19/2018	03/03/2018		KNDJN2A24E7	SOUL	2014	See TAB 12 of Kia's response to DP18-003 Non-Crash Fires (MY) 2010-2015 Kia Soul dated November 16, 2018.

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78	[redacted]	03/28/2018	03/23/2018	[redacted]	KNAGM4A77 [redacted]	OPTIMA	2012	See TAB 14 of Kia's response to DP18-003 Non-Crash Fires (MY) 2011-2014 Kia Optima and Sorento dated October 31, 2018..
79		04/06/2018	04/02/2018		KNDJP3A58F7	SOUL	2015	See TAB 12 of Kia's response to DP18-003 Non-Crash Fires (MY) 2010-2015 Kia Soul dated November 16, 2018.
80		04/20/2018	04/05/2018		KNDJX3A52F7	SOUL	2015	See TAB 12 of Kia's response to DP18-003 Non-Crash Fires (MY) 2010-2015 Kia Soul dated November 16, 2018.
81		04/24/2018	04/20/2018		5XYKT3A18CG	SORENTO	2011	In VOQ dated 4/24/2018, customer stated that "low beam assembly wiring on both low beams has melted". Customer did not contact Kia. Kia was not given an opportunity to inspect this vehicle and thus, determination of the cause could not be made.
82		04/25/2018	04/21/2018		5XYKT3A64EG	SORENTO	2014	See TAB 14 of Kia's response to DP18-003 Non-Crash Fires (MY) 2011-2014 Kia Optima and Sorento dated October 31, 2018.
83		04/26/2018	10/15/2017		5XXGN4A76D	OPTIMA	2013	See TAB 14 of Kia's response to DP18-003 Non-Crash Fires (MY) 2011-2014 Kia Optima and Sorento dated October 31, 2018.
84		05/15/2018	05/12/2018		5XYKTDA63C	SORENTO	2012	See TAB 14 of Kia's response to DP18-003 Non-Crash Fires (MY) 2011-2014 Kia Optima and Sorento dated October 31, 2018.
85		05/18/2018	05/12/2018		5XYKT3A11DG	SORENTO	2013	In VOQ dated 5/18/2018, customer reported engine malfunctioned and vehicle stalled. Customer checked under the hood and noticed "smoke coming from the engine". Vehicle was towed to dealer and diagnosed that engine needed to be replaced. No injuries reported. Customer contacted KMA Consumer Affairs (CA) on 5/15/2018 stating that "vehicle cut off" while moving. Customer did not mention fire or other thermal events to KMA and requested goodwill assistance on engine repairs. KMA agreed to review the request. Customer then filed VOQ with NHTSA on 5/21/2018. Dealer informed KMA on 5/31/2018 that customer scrapped the vehicle and purchased another vehicle. No further contact by customer.
86		05/24/2018	05/20/2018		5XYKTCA69CG	SORENTO	2012	See TAB 14 of Kia's response to DP18-003 Non-Crash Fires (MY) 2011-2014 Kia Optima and Sorento dated October 31, 2018.
87		05/25/2018	05/24/2018		5XXGN4A73E	OPTIMA	2014	See TAB 14 of Kia's response to DP18-003 Non-Crash Fires (MY) 2011-2014 Kia Optima and Sorento dated October 31, 2018.
88		05/30/2018	05/26/2018		5XXGR4A62D	OPTIMA	2013	See TAB 14 of Kia's response to DP18-003 Non-Crash Fires (MY) 2011-2014 Kia Optima and Sorento dated October 31, 2018.

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89	[redacted]	06/13/2018	06/01/2018	[redacted]	5XXGN4A70CG	OPTIMA	2012	In VOQ dated 6/13/2018, customer reported vehicle lost engine power and brakes while driving 45mph. After vehicle stopped, "black smoke began to pour out of the engine compartment", and ultimately, vehicle "went up in flames". All passengers safely exited vehicle. No injuries reported. On 6/6/2018, KMA Consumer Affairs (CA) contacted customer after receiving a web inquiry dated 6/3/2018 stating that customer's vehicle lost engine power while in motion. After safely coasting to a stop, "vehicle started pouring out smoke from under the hood and immediately burst into flames." On 6/26/2018, customer reported that insurer completed inspection and determined that "fire originated from engine bay and was caused by a faulty part" but no specific information as to what the "faulty part" was. KMA contacted customer's insurer and was advised case was closed. Customer advised he had settled with insurer. KMA explained subrogation process to customer.
90		06/14/2018	01/23/2018		5XYKTDA2XBG	SORENTO	2011	In VOQ dated 6/14/2018, vehicle "started smoking from dash and smoke coming out the door "while parked. When fire department cut the hood open, "car randomly started". Customer never contacted Kia. Kia was not given an opportunity to inspect this vehicle and thus a determination of the cause of fire could not be made.
91		06/18/2018	05/28/2018		5XXGR4A7XEG	OPTIMA	2014	In VOQ dated 6/18/2018, customer reports was awakened to fire trucks and saw parked overnight vehicle "fully engulfed in flames". Fire inspector ruled out foul play but could not determine the cause. No injuries reported. Customer contacted KMA Consumer Affairs (CA) on 5/25/2018 alleging vehicle caught fire while parked overnight. Customer further alleged that "fire marshal said it was electrical". On 6/5/2018, customer provided police report number and fire report number to KMA. KMA advised that either Kia or insurance company will need to investigate and explained the subrogation process. KMA engineers reviewed IAA photos. KMA subsequently lost contact with customer before an inspection took place. Cause could not be determined.
92		06/18/2018	06/13/2018			SOUL	2011	See TAB 12 of Kia's response to DP18-003 Non-Crash Fires (MY) 2010-2015 Kia Soul dated November 16, 2018.
93		07/07/2018	07/05/2018		5XYKTCA68DG	SORENTO	2013	In VOQ dated 7/7/2018, customer states that vehicle "burnt up". No injuries reported. KMA Consumer Affairs (CA) identified customer's social media post dated 7/5/2018 stating that vehicle caught on fire. KMA requested additional information from customer. On 7/20/2018, customer advised that she settled with the insurance company. KMA made multiple attempts to contact insurance company. Kia unable to evaluate alleged fire since no information received and no further contact by customer or insurer.
94		07/11/2018	03/03/2018		KNDJN2A24E7	SOUL	2014	See TAB 12 of Kia's response to DP18-003 Non-Crash Fires (MY) 2010-2015 Kia Soul dated November 16, 2018.

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	ODI NO.	REPORT DATE	INCIDENT DATE	CUSTOMER NAME	VIN	MODEL	MY	KIA ASSESSMENT
95	[redacted]	07/12/2018	07/10/2018	[redacted]	5XYKT4A62EG[redacted]	SORENTO	2014	In VOQ dated 7/12/2018, customer reports that engine was replaced in February 2018 per recall. On 6/10/2018, husband was driving on expressway when vehicle "started shaking" and "black smoke was coming out of the car." After husband exited vehicle, it "exploded". No injuries reported. Customer contacted KMA Consumer Affairs (CA) a month after the incident on 7/10/2018 reporting that vehicle began shaking and black smoke was coming out the vehicle while husband was driving on freeway. Seconds after husband pulled over, vehicle "exploded". No injuries reported. Customer provided police report and fire report information to KMA. Engine was replaced by dealer on 2/27/2018 per SC147. KMA reviewed information with engineers. No record located whether cause of fire determined. Customer settled with KMA on 9/10/2018. Shaking vehicle and described circumstances indicate fuel leaking as possible cause of fire. Vehicle within the scope of 18v907.
96		07/12/2018	07/07/2018		5XYKT3A68DG[redacted]	SORENTO	2013	In VOQ dated 7/12/2018, customer states vehicle caught on fire without warning. Customer and wife safely pulled over to the side of the highway and exited vehicle. No injuries reported. Customer contacted KMA Consumer Affairs (CA) on 8/16/2018 reporting that vehicle caught on fire while driving on freeway. Customer was able safely remove vehicle from traffic, exit the vehicle, and assist exiting his wife. No injuries reported. On 8/21/2018, customer provided photos and documents related to incident, which was reviewed by KMA engineers on 9/13/2018. KMA was unable to inspect the vehicle as it was disposed of by dealer prior to 9/13/2018. Dealer had identified that cause of fire was "undetermined mechanical failure." Customer accepted KMA's goodwill settlement offer on 10/15/2018.
97		07/15/2018	02/01/2018		5XYKU4A12BG[redacted]	SORENTO	2011	In VOQ dated 7/15/2018, customer reported interior lights stopped working, which were repaired. Customer subsequently had "electrical fire and damage to wiring the mechanic did not replace". Customer also reported flickering of headlights when turning signal was on, and spontaneous jerks of vehicle while driving. On 10/31/2016, KMA Consumer Affairs (CA) responded to customer's social media post stating that customer is having issues with vehicle. Customer replied that "interior dome lights stopped working...[and] one axel boot missing and one cracked and he [had] to replace axles" and provided contact information. KMA contacted customer on 11/2/2016 and customer reiterated concerns. No mentioning of fire or other thermal events by customer. KMA advised to take vehicle to dealer for diagnosis. No further contact from customer.

	ODI NO.	REPORT DATE	INCIDENT DATE	CUSTOMER NAME	VIN	MODEL	MY	KIA ASSESSMENT
98	[redacted]	11/23/2018	11/19/2018	[redacted]	KNDJN2A22F7[redacted]	SOUL	2015	In VOQ dated 11/23/2018, customer heard a loud "pop" outside--vehicle parked in driveway. Customer reports seeing flames on front end of vehicle. No injuries reported. Customer contacted KMA Consumer Affairs (CA) on 11/26/2018 reporting that after a loud pop, husband's car "engulfed in flames" while parked overnight outside garage. No injuries reported. On 11/29/2018, KMA requested photos, insurance information, and maintenance records from the customer. KMA's third party fire investigatory inspected the vehicle on 12/21/2018. Origin identified as being "adjacent to the front of the left tire". Cause identifed as "likely electrical overheating of wiring insulation and adjacent plastic components". Damage to wiring resulting in overheating could be due to prior vehicle accident.
99		11/26/2018	11/21/2018		KNDJN2A28E7	SOUL	2014	"In VOQ dated 11/26/2018, customer reported hearing "pop" sounds coming from engine area and black smoke clouds expelled from exhaust pipe. Customer opened hood and saw engine on fire. No injuries reported. Customer contacted KMA Consumer Affairs (CA) on 11/26/2018 reporting that vehicle caught on fire while moving 20mph. Customer was able to safely bring vehicle to a complete stop and exited. On 12/5/2018, customer further reported hearing "a ticking sound" prior to loud pop. KMA requested maintenance documents from customer on 12/14/2018. Same day dealer advised vehicle "has a hole in the side of the block and threw #3 rod." Cause of fire due to hole in block. Case closed pending further maintenance records from customer. Vehicle within the scope of 19v120.
100		11/26/2018	11/22/2018		KNDJT2A56D7	SOUL	2013	In VOQ dated 11/26/2018, customer reported "an abnormal clicking noise coming from the engine and smoke under the hood." Subsequently, vehicle lost power, all warning lights illuminated, and white smoke came out of the tailpipe. Vehicle was towed and diagnosed that engine needed to be replaced. No injuries reported. Customer contacted KMA Consumer Affairs (CA) on 11/26/2018. Vehicle was towed to dealer. Dealer noticed extremely sludge in engine suggesting a lack of maintenance. KMA requested maintenance records from customer. Customer threatened legal action and refused to provide maintenance records. No indication that a fire event occurred. No further contact from customer.
101		11/26/2018	11/20/2018		NO VIN INCLUDED	SOUL	2015	In VOQ dated 11/26/2018, customer reported hearing a "sound like a blown tire" while driving. Customer pulled over and saw fire under the hood. Incident occurred on 11/20/18. No injuries reported. Customer never contacted Kia. Kia was not given an opportunity to inspect this vehicle and thus a determination of the cause of fire could not be made.

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102	[redacted]	11/27/2018	11/26/2018	[redacted]	KNAGM4A70B5[redacted]	OPTIMA	2011	In VOQ dated 11/27/2018, customer reported that vehicle caught on fire while driving on a city road. Fire department was called and took a report. Engine has been previously replaced by Kia and "had approximately 5000 on it." No injuries reported. Customer contacted KMA Consumer Affairs (CA) on 11/27/2018 reporting vehicle caught on fire while son was driving. Customer reported brake impairment and "smoke coming out of the engine." Passerby alerted son of the flames; son able to safely exited vehicle. KMA records show engine was replaced on 12/15/2017 under SC147. KMA's third party investigator inspected vehicle on 12/18/2018 and determiend fire likely caused by leaking brake fluid from fitting going into ABS unit every time brakes were applied and that the brake fluid contacted the hot exhaust manifold igniting. KMA offered to repurchase the vehicle and reimburse customer for rental and miscellaneous incidental expenses. Customer accepted.
103	[redacted]	11/27/2018	10/18/2018		5XXGR4A6XDG1	OPTIMA	2013	In VOQ dated 11/27/2018, customer reported while driving on interstate, heard noise coming from engine followed by “explosion.” Customer was able to safely exit vehicle. No injuries reported. Customer contacted KMA Consumer Affairs (CA) on 10/19/2018 reporting that no warning lights appeared and expressed his belief that the turbo was the cause. KMA requested photos and fire report from customer, which customer later provided. On 11/15/2018, after reviewing the information provided, KMA engineers were unable to identify manufacturer defect. KMA's third party investigator inspected the vehicle on the 12/21/18 and confirmed fire originated in the engine compartment but the cause could not be determined. Customer accepted KMA's offer to repurchase vehicle. KMA also covered customer's incidental expenses and reimbursed for personal property lost as a result of incident.
104	[redacted]	11/28/2018	11/22/2018		5XYKTCA61DG3	SORENTO	2013	In VOQ dated 11/28/2018, customer stated vehicle caught on fire while driving on interstate. No injuries reported. On 12/3/2018, KMA Consumer Affairs (CA) contacted customer. Customer stated son was driving—son saw flames in rear view and was able to pull over safely before vehicle was "engulfed in flames". Joint inspection by customer's insurer and KMA was conducted on 2/7/2019. FIre confirmed to have originated in the engine compartment but cause could not be determined.

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105	[redacted]	11/28/2018	08/27/2018	[redacted]	5XYKU3A67CG[redacted]	SORENTO	2012	In VOQ dated 11/28/2018, customer stated heard "a loud noise like a fire gun" and saw smoke out of the engine compartment. After customer stopped vehicle and all occupants exited, "vehicle exploded." No injuries reported. Customer contacted KMA Consumer Affairs (CA) on 8/28/2018 regarding 8/27/2018 incident. Customer saw online about open recall but allegedly never received a notice. KMA confirmed that SC147 had been completed in August 2017 and requested from customer photos and documentation. Dealer performed oil change 3 weeks prior to incident. KMA's third party investigator inspected vehicle on 10/4/2018 and found hole in engine block. On 11/7/2018, customer advised had already settled with insurance company. KMA offered goodwill assistance which customer declined with intention to see attorney. No further contact by customer or customer's attorney.
106	[redacted]	11/28/2018	11/28/2018	[redacted]	5XXGN4A75CG[redacted]	OPTIMA	2012	In VOQ dated 11/28/2018, customer states was driving 35mph when noticed smoke under the hood. Customer pulled over and exited vehicle. Shortly after, vehicle "burst into flames". Vehicle was subject to recall 17v224. No injuries reported. Customer contacted KMA Consumer Affairs (CA) on 11/28/2018 stating that "engine seized" and inquired about open recalls. Customer did not mention any thermal events. KMA advised that recalls SC147 and SC165 had not been completed and assisted customer arrange to tow vehicle to dealer. No further contact from customer.
107	[redacted]	12/05/2018	05/09/2015	[redacted]	5XYKT4A64CG[redacted]	SORENTO	2012	In VOQ dated 12/5/2018, customer states that while traveling on highway, "the engine compartment caught on fire, eventually engulfing the entire vehicle in flames". No injuries reported. Customer contacted KMA Consumer Affairs (CA) on 11/01/2018 over 3 years after incident occurred . Customer reported hearing "a pop" before fire started and believed vehicle was subject to SC147. KMA requested photos and fire reports from customer. Customer subsequently filed VOQ with NHTSA. Vehicle was no longer available for inspection. Customer reported that insurance company did not conduct formal investigation as "it was cheaper for them to just pay [customer] out the vehicle's current value". Kia was not given an opportunity to inspect this vehicle and thus a determination fo the cause of fire could not be determined.

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	ODI NO.	REPORT DATE	INCIDENT DATE	CUSTOMER NAME	VIN	MODEL	MY	KIA ASSESSMENT
108	[redacted]	12/06/2018	11/03/2018	[redacted]	5XYKTDA23DG[redacted]	SORENTO	2013	In VOQ dated 12/6/2018, customer states that while driving 45mph, "the check engine indicator illuminated and the engine exploded". Subsequently, vehicle caught on fire. No injuries reported. Vehicle was towed to dealer, who informed that vehicle was not subject to open recalls. Customer contacted KMA Consumer Affairs (CA) on 11/6/2018 reporting 11/3/18 incident. Customer alleged vehicle made a loud pop sound, and eventually, caught on fire in engine area. Customer also reported "rpm was kicking up high" when vehicle was slowing down. Dealer inspected vehicle and determined "engine had come apart and oil remaining is coagulated due to not being maintained" and found evidence of thermal events. KMA requested customer maintenance record, which customer was unable to produce. KMA offered customer goodwill despite indications that vehicle was not properly maintained causing the incident. On 12/12/2018, customer accepted.
109	[redacted]	12/11/2018	12/09/2018	[redacted]	KNDJP3A54E7[redacted]	SOUL	2014	In VOQ dated 12/11/2018, customer reported that vehicle began to smoke while driving on freeway, and ultimately caught on fire. No injuries reported. Customer did not contact Kia. Kia was not given an opportunity to inspect this vehicle and thus determination of the cause could not be made.
110	[redacted]	12/11/2018	09/10/2018	[redacted]	5XYKT4A29DG[redacted]	SORENTO	2013	Customer contacted NHTSA on 12/11/18 re incident on 9/26/18. Customer alleges "he smelled a burning odor from the cabin" of his vehicle while driving. Vehicle taken to the dealer but dealer unable to duplicate concern. Customer reports 3 weeks later, a whining noise proceeded smoke from under the hood. Vehicle towed to dealer and no repair performed. No injuries alleged. Vehicle towed to dealer on 9/25/18 for "no crank no start" condition. Customer reports vehicle making whining noise and smoke coming from hood. Dealer replaced starter—after attempting to restart, engine seized. Dealer contacted KMA Consumer Affairs (CA) on 9/26/2018 stating that vehicle was brought in due to "no crank no start" and engine seized after repair. Customer contacted KMA on 9/27/2018 inquiring about open recalls and seeking assistance with engine repair since vehicle is out of warranty (115K miles). KMA advised no open recalls. After multiple communications, KMA offered customer payment assistance toward repairs or reimbursement of two payments on new Kia vehicle. No further contact by customer. Smoke allegations related to burnt starter—customer complaint focused on cost of repair.

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	ODI NO.	REPORT DATE	INCIDENT DATE	CUSTOMER NAME	VIN	MODEL	MY	KIA ASSESSMENT
111	[redacted]	12/12/2018	12/09/2018	[redacted]	5XXGN4A73CG017350	OPTIMA	2012	In VOQ dated 12/12/2018, customer states that after 10 minutes having vehicle on but stationary, customer smelled something burning and noticed "greyish blackish smoke coming from the hood" which turner into flames. Customer shut vehicle off and exited, and vehicle engulfed in flames. Eight months prior to incident, new engine was installed due to recall. No injuries reported. Customer contacted KMA Consumer Affairs (CA) on 12/12/2018 stating that engine in vehicle was replaced on 3/26/2018 per SC147. Customer further stated that vehicle "went up in flames and the engine exploded" on 12/9/2018. Customer requested new vehicle and incidental expenses. KMA provided customer with rental vehicle. KMA's third party fire investigator inspected vehicle on 1/9/2019, and concluded origin of fire was engine compartment but cause could not be undetermined. KMA offered goodwill assistance. Customer stated she wanted to speak with an attorney.
112	[redacted]	12/12/2018	12/10/2018	[redacted]	5XXGR4A61CG[redacted]	OPTIMA	2012	In VOQ dated 12/12/18, customer reports while daughter was driving on highway, multiple light came on and vehicle slowed down. When came to complete stop by the curb, daughter attempted to restart the vehicle several times without success. Daughter noticed smoke from under the hood followed by flames. Customer contacted KMA Consumer Affairs (CA) on 12/17/2018 stating that daughter was driving on the highway when engine light and multiple other lights came on and vehicle decelerated. Contrary to what customer reported to NHTSA, customer alleged vehicle caught fire while driving on highway. Customer alleges daughter was bit by a fire ant while waiting for assistance. No other injuries reported and no medical treatment required. KMA's third party investigator inspected the vehicle on 2/3/19. Inspection revealed seized engine, no holes in block and heavy fire damage in the area of the starter. Exact cause of fire undetermined but customer's description, the vehicle's push-botton start feature and fire occurring after customer's repeated attempts to start the vehicle indicate that the fire may have been caused by the overheated starter motor/wiring.
113	[redacted]	12/18/2018	12/14/2018	[redacted]	5XXGR4A69CG[redacted]	OPTIMA	2012	In VOQ dated 12/18/2018, customer reports driving 50mph on 12/14/18 when noticed smoke started coming from under the hood. Customer pulled over, shut off the engine and exited vehicle. "Seconds later, the vehicle caught on fire." No injuries reported. Customer contacted KMA Consumer Affairs (CA) on 12/18/2018 stating that vehicle caught fire while daughter was driving. Customer described vehicle was "filled with smoke. Pulled over immediately and car eventually went up in flames." KMA's third party investigator inspected the vehicle on 1/16/2019. The cause could not be determined. KMA offered customer goodwill assistance to repurchase vehicle.

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	ODI NO.	REPORT DATE	INCIDENT DATE	CUSTOMER NAME	VIN	MODEL	MY	KIA ASSESSMENT
114	[redacted]	12/25/2018	02/26/2016	[redacted]	KNDJT2A6XD7554573	SOUL	2013	In VOQ dated 12/25/2018, customer reports that in February 2016, over two years prior to reporting date, vehicle caught on fire while customer was driving on freeway. No injuries reported. Customer contacted KMA Consumer Affairs (CA) via the web on 12/24/2018 and stated that while wife and mother were driving, vehicle "spontaneously caught fire". Customer's insurance "handled the damages". After multiple attempts to contact customer, KMA was unable to reach customer. No further contact. by customer. Kia was not given an opportunity to inspect this vehicle and thus a determination of the cause of fire could not be made.
115	[redacted]	12/29/2018	12/28/2018	[redacted]	5XYKT3A62CG[redacted]	SORENTO	2012	In VOQ dated, 12/29/18, customer states vehicle "spontaneously caught fire while driving." No injuries reported. Customer contacted KMA Consumer Affairs (CA) on 12/28/18 stating that husband was driving when he saw smoke coming from the hood and "by the time he had pulled over, engine shut off." Husband exited vehicle and saw flames. No injuries reported. Engine was replaced per SC147 in June 2018. KMA's third party investigator inspected the vehicle on 1/24/2019 and identified that fire originated in "the upper areas of the engine" but that the cause could not be determined. On 2/26/2019, KMA offered to repurchase vehicle and compensate customer for personal items lost in fire. Customer accepted the offer.
116	[redacted]	01/01/2019	12/23/2018	[redacted]	5XYKTCA66EG[redacted]	SORENTO	2014	In VOQ dated 1/1/2019, customer states that while vehicle was idling in the driveway, flames started coming from under the hood. After customer exited, vehicle "engulfed in flames" and burned down. No injuries reported. Customer did not contact Kia. Kia was not given an opportunity to inspect this vehicle and thus a determination of the cause of fire could not be made.
117	[redacted]	01/07/2019	01/04/2019	[redacted]	5XXGN4A77CG[redacted]	OPTIMA	2012	In VOQ dated 1/7/2019, customer reported that while driving 55mph, engine shut off and engine caught on fire and extinguished on its own. Vehicle was not towed. No police report was filed. Vehicle was not taken to dealer. No injuries reported. Customer contacted KMA Consumer Affairs (CA) on 1/4/2019 requesting to tow vehicle to dealer. KMA assisted customer with towing vehicle to dealer, who inspected vehicle. Dealer identified seized engine but did not find any evidence of fire. KMA authorized dealer to replace engine and reimbursed customer for out-of-pocket expenses related to incident. No indication of fire identified.

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	ODI NO.	REPORT DATE	INCIDENT DATE	CUSTOMER NAME	VIN	MODEL	MY	KIA ASSESSMENT
118	[redacted]	01/13/2019	08/01/2018	[redacted]	KNAGN4A76B[redacted]	OPTIMA	2011	In VOQ dated 1/13/2019, customer reported that while driving on 8/1/18, noticed smoke coming from under the hood. Customer pulled over, exited and removed all passengers from the vehicle. Shortly after, customer saw flames and called fire department. By the time fire department arrived, vehicle "burned down". No injuries reported. Customer contacted KMA Consumer Affairs (CA) on 8/6/2018 reporting that while driving on highway, engine caught on fire. Customer stated that engine was replaced earlier that year at Kia dealership. Vehicle was towed by insurance company and KMA reached out to arrange a joint inspection. On 10/24/2018, customer informed KMA that already settled with insurance company. Subsequently, insurance company proceeded with subrogation claim. Two months later, customer filed report to NHTSA. Vehicle inspected on 10/10/2018. Inspection identified that fire likely originated at the rear of the engine compartment at the exhaust system and that the fire caused by either oil leak in the engine area or fuel leak at a metal fuel hose.
119	[redacted]	01/17/2019	01/15/2019	[redacted]	KNDJT2A53D[redacted]	SOUL	2013	In VOQ dated 1/17/2019, customer stated that radio system stopped working properly about two weeks prior to incident. On 1/15/2019, customer noticed smoke coming through the dashboard. Customer turned off vehicle and exited. Upon checking, no smoke or fire was found under the hood. Customer stated, "this was the only incident" before customer filed report to NHTSA. Customer never contacted Kia. Kia was not given an opportunity to inspect this vehicle and thus a determination of whether thermal event occurred and/or cause of fire could not be made.
120	[redacted]	01/17/2019	01/15/2018	[redacted]	5XYKT4A22BG170235	SORENTO	2011	In VOQ dated 1/17/2019, customer states that noticed "a flash on the road" seemingly coming from the left front tire. Customer realized that vehicle is on fire, pulled over and exited. Vehicle was consumed by flames within seconds. Customer never contacted Kia. Kia was not given an opportunity to inspect this vehicle and thus determination of the cause could not be made.
121	[redacted]	01/17/2019	05/22/2014	[redacted]	5XYKT3A13CG[redacted]	SORENTO	2012	In VOQ dated 1/17/2019, customer states that vehicle caught fire on 5/22/2014, more than four years prior to reporting to NHTSA. Customer never contacted Kia. Kia was not given an opportunity to inspect this vehicle and thus determination of the cause could not be made.
122	[redacted]	01/17/2019	12/19/2018	[redacted]	5XYKT4A6XCG[redacted]	SORENTO	2012	In VOQ dated 1/17/2019, customer states that while driving on freeway, engine stalled. Customer safely pulled over to the shoulder when noticed smoke coming from under the hood. After customer exited vehicle and closed the door, "the hood burst into flames". Vehicle was in flames when firefighters arrived. Customer never contacted Kia. Kia was not given an opportunity to inspect this vehicle and thus determination of the cause could not be made.

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	ODI NO.	REPORT DATE	INCIDENT DATE	CUSTOMER NAME	VIN	MODEL	MY	KIA ASSESSMENT
123	[redacted]	01/17/2019	01/09/2019	[redacted]	5XYKTCA6XEG[redacted]	SORENTO	2014	In VOQ dated 1/17/2019, customer reports driving on freeway when another driver signaled her to pull over. Customer refused until the other driver forced her to stop by "inching over" toward customer's vehicle. Customer "pushed on the brakes" but noticed loss of braking performance. When vehicle finally stopped, another other driver pulled customer out of the vehicle and told customer that vehicle was on fire. Vehicle was "engulfed in flames" moments later. No injuries reported. Customer's son in law contacted KMA Consumer Affairs (CA) on the day of incident on 1/9/19. KMA authorized dealer to provide rental to customer. On 1/25/19, KMA's third party investigator inspected vehicle and determined fire caused by oil leak on hot exhaust surface. Cause of oil leak could not be determined. KMA offered to purchase vehicle at its current value and reimburse for out of pocket expenses. Customer settled with insurance company.
124	[redacted]	01/17/2019	01/16/2019	[redacted]	KNDJT2A20A7[redacted]	SOUL	2010	In VOQ dated 1/17/2019, customer states that he heard a loud noise and "multiple unknown warning indicators illuminated" and the high beam headlights turned on. Consequently, customer saw smoke and fire under the hood. No injuries reported. Customer reported engine continued running after vehicle was turned off with the key out of ignition. Fire department extinguished the fire and police report was filed. Vehicle was towed by insurance company and considered a total loss. On 1/17/2019, KMA Consumer Affairs (CA) received email stating that several lights came on before customer's vehicle caught on fire. KMA attempted to contact customer several times before communicating with customer on 1/30/2019. Customer reiterated the events, provided insurance company information, and informed he had already settled with his insurance company. KMA contacted IAA and was informed vehicle was sold in February 2019. Kia was not given an opportunity to inspect this vehicle and thus determination of the cause could not be made.

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	ODI NO.	REPORT DATE	INCIDENT DATE	CUSTOMER NAME	VIN	MODEL	MY	KIA ASSESSMENT
125	[redacted]	01/18/2019	12/23/2018	[redacted]	5XYKTCA66EG[redacted]	SORENTO	2014	In VOQ dated 1/18/2019, customer states that was sitting in parked but the running vehicle, when he saw "a flash of light" which were flames from the front of vehicle. Customer manually unlocked the door and exited the vehicle. Neighbor called fire department. Customer used garden hose to spray water around vehicle to extinguish flames and dispered parts from the car. No injuries reported. Customer did not contact Kia. Kia was not given an opportunity to inspect this vehicle and thus determination of the cause could not be made.
126	[redacted]	01/21/2019	01/21/2019	[redacted]	5XXGM4A77DG[redacted]	OPTIMA	2013	In VOQ dated 1/21/2019, customer reported vehicle caught on fire, about three months after engine was replaced due to a recall. No injuries reported. Customer contacted KMA Consumer Affairs (CA) on 1/22/2019 stating that customer was taking vehicle to dealer to check on gas smell when vehicle caught on fire. Customer saw black smoke coming from hood and flames coming from wheels. KMA requested police and fire reports and pictures or videos of the incident, and customer promised to provide them. Review of KMA records indicates customer had engine replaced on 9/29/18 prior to incident. On 2/21/2019 vehicle was inspected and cause of fire was a fuel leak. KMA informed customer of the inspection findings and offered to repurchase vehicle. Vehicle repurchase was completed on 3/22/2019. Customer obtained a brand-new Kia (2019 Rio) as replacement vehicle. Vehicle within the scope of 18v907.
127	[redacted]	01/22/2019	09/25/2018	[redacted]	5XXGN4A73CG[redacted]	OPTIMA	2012	In VOQ dated 1/22/2019, customer reports seeing smoke under the hood while driving on 9/25/18. Customer pulled over into school parking lot, exited vehicle, and saw "the car was on fire." A police arrived shortly after incident and called firefighters to extinguish the fire. Vehicle was totaled. No injuries reported. Customer contacted KMA Consumer Affairs (CA) on 10/2/2018. After customer pulled over and exited, vehicle "burst into flames". Customer later recalled turning on heater shortly before seeing smoke. KMA contacted customer's insurance company to arrange for an inspection. The vehicle was inspected on 11/7/2018. Cause of the fire could not be determined. Customer settled with her insurance company and requested assistance from KMA in paying off the loan remainder. On 2/11/2019, KMA agreed to provide the payoff amount to customer.

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	ODI NO.	REPORT DATE	INCIDENT DATE	CUSTOMER NAME	VIN	MODEL	MY	KIA ASSESSMENT
128	[redacted]	01/30/2019	07/27/2018	[redacted]	5XYKT3A16BG[redacted]	SORENTO	2011	In VOQ dated 1/30/2019, customer reports that vehicle was parked overnight in the attached garage when son heard "a loud pop" and then another loud pop. A man knocked at son's door to inform the garage is on fire. Firefighters arrived and extinguished the fire, but the garage and vehicle were "completely destroyed." The house endured "extensive smoke and water damage". Incident occurred on 7/27/18. No injuries occurred. Fire investigators identified origin to be "center at the front of vehicle" and cause was undetermined. Customer contacted KMA Consumer Affairs (CA) on 8/3/2018. Customer was informed of fire in the garage and saw flames once outside. Customer reports "[t]he garage is completely burned up and there is smoke damage throughout the house." Customer's home insurance and auto-insurance completed fire investigation and concluded that vehicle was the origin of fire. But could not determine cause. Fire Department inspected and determined fire started in garage but could not rule out several possibilities such as a full plastic fuel can, generator, lawnmower and subject vehicle. KMA participated in inspections of the garage on 10/4/18 and the vehicle on 12/6/18. KMA found cause undetermined. KMA has not heard from claimant or insurance since 12/6/18 inspection. Multiple ignition sources in garage; cause of fire could not be determined.
129	[redacted]	01/30/2019	11/22/2017	[redacted]	KNDJX3A53E7[redacted]	SOUL	2014	In VOQ dated 1/30/2019, customer reports while driving on freeway, vehicle "began to lose power". Once customer pulled over, the lights on dashboard illuminated and vehicle "shut down completely". Customer saw smoke coming from the hood, followed by "a small fire". Vehicle was "burned down". No injuries reported. Customer did not contact Kia. Kia was not given an opportunity to inspect this vehicle and thus determination of the cause could not be made.
130	[redacted]	02/02/2019	01/31/2019	[redacted]	5XYKT3A67DG[redacted]	SORENTO	2013	In VOQ dated 2/2/19, customer states that while driving down a rural road, heard a pop, could not accelerate, and then saw smoke and flames coming from under the hood. No reported injuries occurred. Customer contacted KMA Consumer Affairs (CA) on 1/31/19 stating vehicle produced a loud pop and then "just burst into flames." Customer inquired about rental and requested Kia to replace damaged personal items in fire. On 2/1/19, KMA authorized rental and requested incident photos and fire report from customer. KMA's third party investigator inspected the vehicle on 2/14/19. Inspection identified cause of fire was from oil escaping due to hole in block and contacting the catalytic converter. KMA offered to repurchase vehicle, compensate customer for personal items lost and pay storage fees. Customer requested to increase the offer price and KMA agreed. Customer accepted offer on 3/14/19.
131	[redacted]	02/08/2019	12/21/2018	[redacted]	5XYKT3A14DG[redacted]	SORENTO	2013	In VOQ dated 2/8/2019, customer stated "car burst into flames without any warning". Customer never contacted Kia. Kia was not given an opportunity to inspect this vehicle and thus determination of the cause could not be made.

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	ODI NO.	REPORT DATE	INCIDENT DATE	CUSTOMER NAME	VIN	MODEL	MY	KIA ASSESSMENT
132	[redacted]	02/10/2019	02/10/2019	[redacted]	5XXGR4A61[redacted]	OPTIMA	2012	In VOQ dated 2/10/2019, customer reports her push-button ignition vehicle "had problems starting in cold weather" (at or below freezing temperature - 30 F) because it would not recognize the proximity of the key fob. On the morning of incident, it was about 30 F. Customer "pressed the brake and hit the start button" when heard a loud pop and hissing sound coming from vehicle. Large amount of smoke appeared seemingly from the driver's seat area. A few minutes later, smoke dissipated. Customer never saw flames. Customer did not contact Kia regarding this incident. Kia was not given an opportunity to inspect this vehicle and thus determination of the cause could not be made.
133	[redacted]	02/11/2019	01/28/2018	[redacted]	5XXGN4A65CG[redacted]	OPTIMA	2012	In VOQ dated 2/11/2019, customer reported vehicle was "stuck in a patch of snow." Customer moved vehicle back and forth to free from snow when vehicle caught fire under the hood. Fire department extinguished the fire, and police report was filed. No reported injuries. Customer contacted KMA Consumer Affairs (CA) on 1/30/2019 reporting that vehicle caught on fire while customer tried ""to push through"" a patch of snow. No injury or other property damage occurred. Insurer provided customer with rental. On 2/5/2019, KMA contacted insurer to arrange inspection. Customer subsequently filed VOQ. Vehicle inspection was completed on 2/18/2019. Fire originated between the engine compartment and the firewall, and the cause was undetermined. Customer settled with insurer. As goodwill gesture, KMA offered to review documents for any out of pocket expenses and rental assistance.
134	[redacted]	02/12/2019	02/11/2019	[redacted]	KNAGN4A77B5145199	OPTIMA	2011	In VOQ dated 2/12/2019, customer reported grandson was driving 40-45 MPH when vehicle "jerked and smoke emerged from the hood." Customer was able to maneuver the vehicle to the side of road and exit before vehicle caught fire. Fire department extinguished the fire, and police report was filed. No reported injuries. Customer contacted KMA Consumer Affairs (CA) on 2/12/19 to report vehicle fire and request rental assistance. KMA arranged rental for next day. KMA's third party investigator inspected the vehicle on 3/7/19. Inspection identified cause of fire was from oil escaping due to hole in block and contacting the catalytic converter.
135	[redacted]	02/21/2019	02/18/2019	[redacted]	KNDJP3A57E[redacted]	SOUL	2014	In VOQ dated 2/21/2019, customer states while driving 65 MPH on freeway, vehicle decelerated. Customer heard "a pop and saw smoke". Once pulled over, customer lifted the hood and saw flames. No injuries reported. Customer did not contact Kia regarding this incident. Kia was not given an opportunity to inspect this vehicle and thus determination of the cause could not be made.

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	ODI NO.	REPORT DATE	INCIDENT DATE	CUSTOMER NAME	VIN	MODEL	MY	KIA ASSESSMENT
136	[redacted]	03/01/2019	12/25/2018	[redacted]	KNDJP3A57F7[redacted]	SOUL	2015	In VOQ dated 3/1/2019, customer stated vehicle "started to vibrate abnormally, smoke billowed from the tail pipe" and vehicle stalled. Customer reports dealer found hole in the engine block and advised to replace engine. Incident occurred on 12/25/18. No reported injuries. Customer contacted KMA Consumer Affairs (CA) on 1/11/19 reporting stall incident but made no mention of fire. Customer did inquire about extended warranty purchased from dealer but KMA unable to provide information regarding that warranty. Two months later, customer filed VOQ with NHTSA. KMA attempted to contact customer on several occasions after VOQ filing but customer was non-responsive. No indication that a fire occurred. [redacted]
137	[redacted]	03/04/2019	02/23/2019	[redacted]	5XYKT3A65EG[redacted]	SORENTO	2014	In VOQ dated 3/4/2019, customer reported vehicle fire while driving about 30 mph. Customer was alerted to fire by other drivers. Incident occurred on 2/23/19. Engine was replaced on 2/15/2019. No injuries reported. Dealer notified KMA Consumer Affairs (CA) of engine fire on 2/23/2019. Dealer provided customer with a rental. Customer filed claim with BBB, complained to NHTSA, and posted on several social media sites. KMA's third party fire investigator inspected the vehicle on 3/22/19. Inspection identifed that the cause of the engine compartment fire was undetermined.
138	[redacted]	03/04/2019	02/28/2019	[redacted]	5XXGN4A73C[redacted]	OPTIMA	2012	In VOQ dated 3/4/2019, customer stated while driving 70 mph, engine "just stopped." Customer coasted to shoulder and attempted to restart vehicle. Customer then noticed smoke under the hood and through the vents. Customer exited vehicle and saw "flames through grill." Incident occurred on 2/28/19. No injuries reported. Customer sent Web Note to Kia on 3/7/2019 regarding incident. KMA Consumer Affairs (CA) contacted customer on 3/11/2019 to obtain details about incident. On 3/12/2019, KMA obtained permission to inspect and within a few days, inspected vehicle with two NHTSA representatives present. Inspection indicated engine seized during operation. Fire started due to repeat start attempts causing the starter overheating. Customer settled with insurer. KMA offered reimbursement of out of pocket expenses, including items lost as a result of incident.

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	ODI NO.	REPORT DATE	INCIDENT DATE	CUSTOMER NAME	VIN	MODEL	MY	KIA ASSESSMENT
139	[redacted]	03/07/2019	03/07/2019	[redacted]	5XXGM4A77D[redacted]	OPTIMA	2013	In VOQ dated 3/7/2019, customer stated that while driving on interstate, vehicle started to smoke. Customer pulled over, saw flames from under the hood, but was able to exit the vehicle. Incident happened on 3/7/29. No injuries reported. Customer contacted KMA Consumer Affairs (CA) on the day of incident requesting KMA investigate. Customer's engine replaced per SC147 on 8/10/17. KMA arranged rental for customer through dealer and requested photos of incident and insurer's contact information. KMA inspected vehicle on 3/15/2019 and it was determined that fire was caused by fuel leak. KMA offered to repurchase vehicle at KBB value and reimburse for out of pocket expenses. Customer accepted the offer. KMA also covered towing fee to and from dealer. Vehicle within the scope of 18v907
140	[redacted]	03/11/2019	02/28/2019	[redacted]	5XXGN4A75DG[redacted]	OPTIMA	2013	In VOQ dated 3/11/2019, customer alleges they pulled into rest stop after vehicle started "acting funny." Customer smelled smoke and saw flames from under the hood. Incident occurred on 2/28/19. No injuries reported. Engine previously replaced under SC147. Customer contacted KMA Consumer Affairs (CA) on 3/12/19 regarding incident. KMA requested photos, fire report, and insurer's information, which customer later provided. On 3/22/2019, customer's insurer informed KMA that insurer will be seeking subrogation. KMA contacted insurance to arrange inspection of vehicle. On 5/9/19 vehicle was inspected and it was determined that fire was caused by oil leaking from hole in block which contacted the hot exhaust. KMA working on resolution with customer.
141	[redacted]	03/13/2019	03/11/2019	[redacted]	5XXGM4A75D[redacted]	OPTIMA	2013	In VOQ dated 3/13/2019, customer stated that vehicle caught on fire at 10:30 PM after being pakred on driveway for three and half hours. Incident occurred on 3/11/19. No injuries reported. Customer contacted KMA Consumer Affairs (CA) on 3/12/2019 reporting that vehicle caught on fire and requested a rental. Customer stated that around 10:30 PM heard "hissing and popping sound from outside" and saw smoke and flames from vehicle. Customer's insurer declined to open a claim referring insured to Kia. Customer requested KMA to move vehicle from her property to avoid HOA fine. KMA assisted customer with rental and removed vehicle on 3/25/2019. Customer provided photos and video of incident. KMA's third party fire investigator inspected the vehicle on 4/25/19. The inspection revealed the cause of the engine compartment fire was undetermined.

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	ODI NO.	REPORT DATE	INCIDENT DATE	CUSTOMER NAME	VIN	MODEL	MY	KIA ASSESSMENT
142	[redacted]	03/15/2019	03/14/2019	[redacted]	KNDJN2A2XF7[redacted]	SOUL	2015	In VOQ dated 3/15/2019, customer stated that while traveling 65 mph, "heard a snap" from under vehicle. Several lights illuminated, customer pulled over, and vehicle stalled. After customer exited vehicle, saw flames from undercarriage of engine. Customer suspected that vehicle was subject to SC 176 but has never received notice. Customer contacted KMA Consumer Affairs (CA) on 3/15/2019 reporting vehicle fire and requesting compensation for out of pocket expenses related to fire and "for the scare." Customer described hearing "a snap" then saw CEL and hydroplane lights illuminated, then saw smoke and once pulled over, saw front of vehicle was on fire. KMA's third party fire investigator inspected the vehicle on on 4/4/19. Fire caued by oil leaking onto exhaust. No hole in block identified.
143	[redacted]	03/15/2019	03/14/2019		5XYKTCA60EG[redacted]	SORENTO	2014	In VOQ dated 3/15/2019, customer stated while driving 65 mph, "passenger notice sparks left rear of car." Customer pulled over, opened the hood, and saw engine was on fire. Fire department extinguished fire and vehicle was towed. Incident occurred on 3/14/19. No injuries reported. Customer sent web note on 3/15/2019 reporting vehicle fire. KMA Consumer Affairs (CA) contacted customer on 3/18/2019 to obtain details of incident. Customer stated step-son was driving when passenger saw sparks in the rear. After step-son pulled over, he saw engine was on fire. After fire was extinguished by fire department, vehicle was towed to TCB Towing and Auto Service (TCB). Customer did not contact insurance since she does not have full coverage. KMA contacted TCB to arrange vehicle to be towed to different location where it could be inspected without accumulating storage fees. KMA's third party fire investigator inspected vehicle on 4/24/19. Inspection identified fire caused by oil leaking onto manifold due to hole in the block.
144	[redacted]	03/15/2019	10/15/2018		KNDJP3A51E7[redacted]	SOUL	2014	In VOQ dated 3/15/2019, customer stated while "accelerator pedal was depressed, vehicle stalled and made an abnormal noise as if pressure were being released." Shortly after, vehicle began "shaking, smoking, and making clunking noises." Incident occurred on 10/15/18. No injuries reported. Body shop contacted KMA Consumer Affairs (CA) regarding incident on 10/17/18. Customer purchased vehicle used on 9/7/2018. KMA advised taking vehicle to Kia dealer to be diagnosed. Dealer confirmed hole in block; cause of hole in block unknown. Customer contacted KMA on 11/1/2018 requesting assistance with engine repairs since fire damage minimal. KMA requested maintenance records from customer; records provided on 11/27/18. KMA offered customer three-day rental and no repair assistance since manufacturer's warranty had expired. Customer accepted offer.

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	ODI NO.	REPORT DATE	INCIDENT DATE	CUSTOMER NAME	VIN	MODEL	MY	KIA ASSESSMENT
145	[redacted]	03/18/2019	03/07/2019	[redacted]	5XXGN4A70D[redacted]	OPTIMA	2013	In VOQ dated 3/18/2019, customer stated daughter park vehicle in public parking lot when noticed the front of vehicle was on fire. No injuries reported. Fire damaged two nearby parked vehicles. Incident occurred on 3/7/19—customer's insurer contacted KMA on 3/28/19 via letter. Customer alleges vehicle caught fire while parked at gym. Customer left home to go to the gym and reported smelling burning rubber but saw nothing unusual on the temperature gauge. Customer used the car for most of the day without issue. Customer went into gym when someone flagger her down to inform her that her vehicle was on fire. Vehicle fire damaged a Toyota Highlander and BMW X4. Insurer claims fire caused by defect in vehicle. As of 4/3/19, KMA was in process of scheduling coordinated inspection with insurer.
146	[redacted]	03/19/2019	09/07/2018	[redacted]	KNAGN4A74B[redacted]	OPTIMA	2011	In VOQ dated 3/19/2019, customer reported while driving 25 mph, smelled burning odor, then "black smoke appeared and flames rose from the hood". Customer safely coasted vehicle off the road and exited. No reported injuries. Customer never contacted Kia. Kia was not given an opportunity to inspect this vehicle and thus determination of the cause could not be made.
147	[redacted]	03/20/2019	03/16/2019	[redacted]	KNDJP3A51F7[redacted]	SOUL	2015	In VOQ dated 3/20/2019, customer stated while driving 50 mph, heard "a clicking noise" coming from the engine. Customer drove vehicle off the road and passerby extinguished fire under the hood. Incident occurred on 3/16/19. No injuries reported. Customer contacted KMA Consumer Affairs (CA) on 3/22/2019 reporting that son was driving when vehicle started "running rough". Son pulled over, opened the hood, and saw flames from backside of the engine. Passerby used fire extinguisher to stop fire. Vehicle was towed to local shop. KMA arranged to tow vehicle to Kia dealer for inspection and requested maintenance records from customer. Dealer advised that fire originated at high-pressure fuel line and believes fuel line might not have been properly tightened. Warranty history shows last repair performed at dealer in 2016 since vehicle out of warranty (130K plus miles). KMA reviewed pictures, dealer's findings, and maintenance records and decline goodwill assistances. Fire likely caused by 3rd party repair error.

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148	[redacted]	03/01/2016	02/17/2016	[redacted]	5XXGN4A74C[redacted]	OPTIMA	2012	In VOQ dated 03/01/16, customer stated her car would not accelerate while merging onto freeway. Customer pulled to side of road and when she stopped the vehicle "a lot of smoke started coming from the engine and the car would not restart." Customer had not noticed anything wrong prior to the inability to accelerate. No reported injuries. Customer contacted KMA Customer Affairs (CA) on 2/18/16 and reported her vehicle had no oil and engine was "blown." Customer requested engine replacement to be covered under warranty even though customer purchased vehicle used and vehicle was 11K miles outside of warranty. Dealer inspected vehicle and determined engine failure due to metal shavings in oil. Despite customer's vehicle being out of warranty, KMA offered and customer accepted one-time goodwill offer to replace the engine. Customer's primary concern related to cost of repair. No indicattion of fire or other thermal event.
149		03/10/2016	02/18/2016		5XYKT4A64EG[redacted]	SORENTO	2014	See TAB 14 of Kia's response to DP18-003 Non-Crash Fires (MY) 2011-2014 Kia Optima and Sorento dated October 31, 2018.
150		03/19/2016	02/21/2016		5XYKT3A10CG[redacted]	SORENTO	2012	See TAB 14 of Kia's response to DP18-003 Non-Crash Fires (MY) 2011-2014 Kia Optima and Sorento dated October 31, 2018.
151		05/16/2016	04/18/2016		KNDJT2A51D7[redacted]	SOUL	2013	See TAB 12 of Kia's response to DP18-003 Non-Crash Fires (MY) 2010-2015 Kia Soul dated November 16, 2018.
152		06/08/2016	05/05/2016		5XXGN4A75E[redacted]	OPTIMA	2014	In VOQ dated 6/8/16, customer reported that while driving her engine oil warning light illuminated and black smoke emitted from the exhaust. No reported injuries. No actual flames. Customer contacted KMA Consumer Affairs (CA) on 6/3/16, and requested that KMA cover the cost of replacing her engine. KMA records indicate customer vehicle inspected on 6/2/16 and found engine oil was 4 quarts low suggesting possible oil leak related to maintenance issues. On 6/16/16, engine replaced under warranty; cost of rental car covered by KMA. Customer's primary concern related to cost of repair. No indication fire or other thermal event occurred.
153		06/08/2016	05/09/2016		5XXGN4A74E[redacted]	OPTIMA	2014	See TAB 14 of Kia's response to DP18-003 Non-Crash Fires (MY) 2011-2014 Kia Optima and Sorento dated October 31, 2018.

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154	[redacted]	06/14/2016	05/13/2016	[redacted]	5XYKT3A11DG[redacted]	SORENTO	2013	In VOQ dated 6/14/16, customer reported hearing an abnormal sound followed by a loud metal noise coming from under the vehicle. The customer noticed smoke coming from hood and oil dripping under the vehicle. No injuries reported. Incident occurred on 5/13/16. Customer contacted KMA Consumer Affairs (CA) on 5/27/16 regarding incident. Customer stated dealer had advised the engine would be replaced under warranty but customer unable to contact dealer. Dealer spoke with CA on 6/10/16 indicating that vehicle inspection identified engine sludge consistent with lack of maintenance. Customer informed repair would not be covered under warranty by CA on 6/14/16. Customer contacted NHTSA on same day. Subsequent communications between CA and dealer confirm repair to be covered under warranty. No hole in block. Engine replaced under warranty. Complaint unrelated to any fire incident.
155		08/02/2016	07/30/2016		5XXGN4A71CG[redacted]	OPTIMA	2012	See TAB 14 of Kia's response to DP18-003 Non-Crash Fires (MY) 2011-2014 Kia Optima and Sorento dated October 31, 2018.
156		08/10/2016	08/07/2016		5XXGN4A72CGC[redacted] VIN Not Provided by Customer; Identified by KMA)	OPTIMA	2012	See TAB 14 of Kia's response to DP18-003 Non-Crash Fires (MY) 2011-2014 Kia Optima and Sorento dated October 31, 2018.
157		08/25/2016	08/24/2016		KNDJN2A28F7[redacted]	SOUL	2015	See TAB 12 of Kia's response to DP18-003 Non-Crash Fires (MY) 2010-2015 Kia Soul dated November 16, 2018.
158		08/27/2016	08/20/2016		5XXGR4A64CG[redacted]	OPTIMA	2012	See TAB 14 of Kia's response to DP18-003 Non-Crash Fires (MY) 2011-2014 Kia Optima and Sorento dated October 31, 2018.
159		09/06/2016	08/27/2016		KNDJN2A29F7[redacted]	SOUL	2015	See TAB 12 of Kia's response to DP18-003 Non-Crash Fires (MY) 2010-2015 Kia Soul dated November 16, 2018.
160		09/06/2016	08/28/2016		5XXGR4A65CG[redacted]	OPTIMA	2012	See TAB 14 of Kia's response to DP18-003 Non-Crash Fires (MY) 2011-2014 Kia Optima and Sorento dated October 31, 2018.
161		10/13/2016	10/01/2016		KNAGN4A70B[redacted]	OPTIMA	2011	In VOQ dated 10/13/16, customer reported vehicle stalled, coasted off the road and was unable to restart it. Customer noticed smoke from the starter when the customer made several attempts to restart vehicle. Incident occurred on 10/1/16. No injuries were reported. Customer contacted KMA Consumer Affairs (CA) on 1/25/17 and stated he had ordered an engine, but dealer had not given him an ETA. CA followed up with dealer and was informed that customer had purchased a used engine that could not be used as a replacement. Dealer contacted KMA and confirmed engine seizure and burnt out starter motor. Dealer replaced engine in accordance with SC147. KMA also reimbursed customer for the engine he bought prior to the recall under goodwill. Thermal event likely caused by customer's repeat start attempts after engine seizure.
162		10/25/2016	10/24/2016		5XXGN4A75D[redacted]	OPTIMA	2013	See TAB 14 of Kia's response to DP18-003 Non-Crash Fires (MY) 2011-2014 Kia Optima and Sorento dated October 31, 2018.

	ODI NO.	REPORT DATE	INCIDENT DATE	CUSTOMER NAME	VIN	MODEL	MY	KIA ASSESSMENT
163	[redacted]	11/25/2016	03/17/2014	[redacted]	5XXGN4A77CG[redacted]	OPTIMA	2012	In VOQ dated 11/25/16, customer stated there was "excessive smoke and a premature build up of engine sludge." No injuries reported. Customer contacted KMA Consumer Affairs (CA) on 3/18/15, over a year before filing VOQ with NHTSA due to vehicle having low oil and a puff of smoke coming out of vehicle after dealer test drive. Dealer identified sludge in engine. Repair records showed lack of maintenance. Two years later, on 1/9/17 customer brought vehicle into dealer to have it reviewed in light of warranty extension for connecting rod issues (WTY004). Dealer found metal and sludge in oil plan. Engine replaced pursuant to WTY004. The smoke described by customer unrelated to fire.
164		12/29/2016	12/24/2016		5XYKT3A19CG[redacted] (VIN Not Provided By Customer; Identified by KM	SORENTO	2012	See TAB 14 of Kia's response to DP18-003 Non-Crash Fires (MY) 2011-2014 Kia Optima and Sorento dated October 31, 2018.
165		03/03/2017	02/14/2017		5XYKTCA61DG[redacted] (VIN Not Provided By Customer; Identified by KMA)	SORENTO	2013	See TAB 14 of Kia's response to DP18-003 Non-Crash Fires (MY) 2011-2014 Kia Optima and Sorento dated October 31, 2018.
166		03/14/2017	03/10/2017		5XXGM4A77DG[redacted]	OPTIMA	2013	See TAB 14 of Kia's response to DP18-003 Non-Crash Fires (MY) 2011-2014 Kia Optima and Sorento dated October 31, 2018.
167		04/03/2017	03/16/2017		5XXGN4A78CG[redacted] (VIN Not Provided By Customer; Identified by KMA)	OPTIMA	2012	See TAB 14 of Kia's response to DP18-003 Non-Crash Fires (MY) 2011-2014 Kia Optima and Sorento dated October 31, 2018.
168		04/10/2017	02/10/2017		5XYKW4A21BG[redacted]	SORENTO	2011	In VOQ dated 4/10/17, customer noticed smoke coming from vehicle and discovered that it was low on oil. Dealer diagnosed "bearing was faulty and caused an oil leak." There was sludge in the motor, which needed to be replaced. No injuries were reported. On 1/31/17 dealer contacted KMA concerning customer's description of vehicle having ticking noise and smoke coming out of tailpipe. Diagnostics revealed engine oil level low and sludge. Sludge caused by lack of maintenance. On 2/6/17 customer contacted KMA Customer Support (CA) and stated he took vehicle to dealer because of fumes and smoke from exhaust. As a result customer seeking Kia to cover engine replacement costs. Engine repair not covered under warranty due to lack of maintenance. Information provided is inconsistent with a fire a or other thermal event.
169		04/16/2017	04/16/2017		5XXGR4A64CG[redacted]	OPTIMA	2012	See TAB 14 of Kia's response to DP18-003 Non-Crash Fires (MY) 2011-2014 Kia Optima and Sorento dated October 31, 2018.
170		05/08/2017	05/01/2017		5XYKT3A63CG[redacted]	SORENTO	2012	See TAB 14 of Kia's response to DP18-003 Non-Crash Fires (MY) 2011-2014 Kia Optima and Sorento dated October 31, 2018.

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171	[redacted]	05/10/2017	05/04/2017	[redacted]	5XYKT4A27DG[redacted]	SORENTO	2013	In VOQ dated 5/10/17, customer stated "door handle fractured and detached from vehicle" and that the "front passenger side headlamp and electrical component melted." No injuries were reported. Customer contacted KMA Customer Affairs (CA) on 5/8/17 regarding having to pay for door handle repair and sought assistance from Kia to have it covered under warranty. Customer did not contact CA regarding melted headlamp component. No further communications from customer.
172		05/11/2017	05/11/2017		5XXGN4A71C	OPTIMA	2012	In VOQ dated 5/11/17, customer stated the vehicle and electrical system failed for the second time and car system shut down. Smoke started coming out of the vents and all the lights started flashing. When hood opened, smelled melting plastic/rubber. Sparking started and the car turned back on its own. Customer never contacted Kia. Kia was not given an opportunity to inspect this vehicle and thus a determination of the cause of any alleged fire could not be made.
173		05/12/2017	04/29/2017		5XXGR4A61D	OPTIMA	2013	See TAB 14 of Kia's response to DP18-003 Non-Crash Fires (MY) 2011-2014 Kia Optima and Sorento dated October 31, 2018.
174		05/24/2017	05/23/2017		5XYKT4A19BG	SORENTO	2011	See TAB 14 of Kia's response to DP18-003 Non-Crash Fires (MY) 2011-2014 Kia Optima and Sorento dated October 31, 2018.
175		05/24/2017	04/28/2017		5XYKT3A68EG	SORENTO	2014	See TAB 14 of Kia's response to DP18-003 Non-Crash Fires (MY) 2011-2014 Kia Optima and Sorento dated October 31, 2018.
176		06/12/2017	05/14/2017		KNAGM4A71D	OPTIMA	2013	In VOQ dated 6/12/17, customer stated vehicle stalled, lost all power, all warning lights illuminated. Customer reported issue occurred "numerous times over the past three months." Customer also identified that on a prior occasion, a loud popping noise was heard and smoke emitted from under the hood. Customer stated failure occurred numerous times. No injuries were reported. Customer contacted KMA Consumer Affairs on 5/17/17 regarding multiple engine issues. Customer identified that on a prior occasion the "piston popped and blew a hole in my oil pan." Engine replaced. KMA also provided goodwill assistance to customer for inconvenience. Vehicle covered within scope of 17v224 (SC147). No mention or any indication of fire or thermal event resulting from any of the described engine issues.
177		06/28/2017	02/07/2017		KNAGN4A72B	OPTIMA	2011	In VOQ dated 6/28/17, 4 months after incident occurred, customer stated vehicle stalled, all warning indicators on instrument panel illuminated and smoke came from under the hood. Upon opening hood, smoke coming from the starter. No injuries were reported. Customer reported receiving notification for Recall 17v224. Customer waiting for repair while engine on backorder. Customer contacted KMA Consumer Affairs (CA) on 5/2/17 to inquire about status of vehicle being repaired at the dealer. Engine replaced pursuant to Recall 17v224 (SC147).

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178	[redacted]	07/16/2018	06/23/2018	[redacted]	5XYKU3A63C[redacted]	SORENTO	2012	In VOQ dated 7/16/18, customer stated she heard a popping sound under the car while driving, followed by another popping sound occurring 10-15 seconds later. The check engine light and oil lamp light illuminated. Customer pulled over and attempted to restart her vehicle; vehicle immediately turned off. Customer exited vehicle and vehicle became "fully engulfed in flames". Fire department and freeway roadside assistance extinguished fire. No injuries were reported. Customer contacted KMA Customer Affairs (CA) on June 28, 2018 stating that after hearing two popping sounds, the car started smoking and people waved her down letting her know her car was on fire. KMA attempted to repurchase the vehicle. Customer declined. Customer sought an explanation as to why vehicle caught on fire. KMA performed a joint inspection of the vehicle on November 1, 2018 and identified hole in block. Cause of the fire was oil contacting exhaust manifold. Customer settled with insurance company and KMA reimbursed customer for all out-of-pocket expenses associated with incident. Customer filed warranty lawsuit against KMA on 2/26/19. Fire caused by oil contacting exhaust manifold due to hole in block.
179	[redacted]	07/16/2018	03/08/2018		5XYKUDA25B[redacted] (VIN Not Provided By Customer; Identified by KMA)	SORENTO	2011	In VOQ dated 7/16/18, customer stated "the engine started on fire in February 2018 at three weeks." The customer further stated "engine wasn't tight those bolts missing and you move the car on the street in the SUV shake and rattle the engine" so she called the 1-800 KIA number. No injuries were reported. Customer contacted KMA Consumer Affairs (CA) on 2/21/18 stating that her engine caught fire on the highway and a passerby with a fire extinguisher put the fire out. Customer called to find out what happened to her vehicle and to get a replacement. KMA engineers reviewed photos and initially referred customer referred to insurance company. Dealer inspected vehicle and found that engine failed causing multiple holes in engine. Fire due to leaking oil on hot exhaust. Kia made an offer of goodwill to repair vehicle or give customer the value of vehicle. Customer chose repair. Kia also reimbursed customer rental expenses.

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180	[redacted]	07/17/2018	07/13/2018	[redacted]	5XXGR4A62CG[redacted]	OPTIMA	2012	In VOQ dated 7/17/18, customer stated he parked his vehicle in the driveway, walked inside the house and heard a "loud pop" from his vehicle. Customer observed flames coming from under the hood. Customer stated that by the time the fire department had arrived the "car had burned to the ground and had melted all of the siding off the front of my garage." No injuries were reported. Customers initially contacted KMA Customer Affairs (CA) on 7/17/18 via the Web. Two days later, Customer's wife contacted CA and stated that approximately three minutes after vehicle was parked a loud popping noise occurred (from the tires) and the vehicle's engine was on fire. Exterior of garage door damaged. Customer settled with insurance company. KMA offered and customer accepted goodwill payment of loan balance. Vehicle inspected by KMA engineer on 9/21/18. The cause of engine fire was undetermined.
181		07/19/2018	05/22/2014		5XYKT3A13CG[redacted]	SORENTO	2012	In VOQ dated 7/19/18, customer stated over six years ago, on 5/22/14, her detailer went to turn on the vehicle and "the whole engine caught fire." Customer no longer owned vehicle when VOQ filed. No injuries were reported. Customer never contacted Kia. Kia was not given an opportunity to inspect this vehicle and thus a determination of the cause of fire could not be made.
182		07/19/2018	07/19/2018		5XYKWDA74EG[redacted]	SORENTO	2014	In VOQ dated 7/19/18, customer stated while pulling onto his residential street, he smelled smoke and burning plastic. A nearby driver told customer engine was on fire. Customer reported flames were coming out of the bottom of the engine and "smoke was coming from the crease in the hood covering engine." The passerby opened the hood and put out fire with fire extinguisher. No injuries were reported. Customer contacted KMA Consumer Affairs (CA) on 7/24/18 and stated that his whole engine caught on fire and noticed flames shooting out from the bottom. KMA requested photos and insurance information on 7/25/18. On 7/31/18, customer emailed CA advising he made a claim with his insurance company. No further contact from customer or insurance company. Kia was not given an opportunity to inspect this vehicle and thus a determination of the cause of fire could not be made.
183		07/19/2018	10/20/2017		5XXGN4A71CO[redacted]	OPTIMA	2012	In VOQ dated 7/19/18, customer stated "car suddenly caught fire on October 20, 2017." Customer reported passenger "saw smoke from front seat," both exited the vehicle and saw fire underneath. No injuries reported. Customer never contacted Kia. Kia was not given an opportunity to inspect this vehicle and thus a determination of the cause of fire could not be made.
184		07/19/2018	07/13/2018		KNDJT2A54C7[redacted]	SOUL	2012	See TAB 12 of Kia's response to DP18-003 Non-Crash Fires (MY) 2010-2015 Kia Soul dated November 16, 2018.

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	ODI NO.	REPORT DATE	INCIDENT DATE	CUSTOMER NAME	VIN	MODEL	MY	KIA ASSESSMENT
185	[redacted]	07/19/2018	06/30/2018	[redacted]	5XYKTDA61CG[redacted] Customer provided incorrect VIN number; KMA provided proper VIN.	SORENTO	2012	In VOQ dated 7/19/18, customer stated that she observed smoke coming from the rear of her vehicle while driving. Customer pulled over and claims brakes and emergency brake did not work, so she placed the car in park. Customer stated "at that point we see flames shooting at us." The car then started to roll down a hill. One of the doors hit her daughter as she exited the vehicle. Other two passengers and dog able to exit vehicle. Customer reported five reported persons injured, (one of which is believed to be the dog.) Customer contacted KMA Consumer Affairs (CA) on 7/3/18 and stated that her vehicle caught fire the previous Saturday and was a total loss. She wanted Kia to send someone to look at it. KMA received subrogation claim from customer's insurance on 8/16/18. NCA received a letter from Nationwide on 8/20/18 stating that fire may have arisen from a defect in the automobile. Offered opportunity to attend a joint destructive inspection of vehicle. On 10/19/18, KMA hired third party to attend joint inspection of vehicle. Despite numerous attempts to coordinate inspection date, inspection was delayed due to lack of response from insurance and third party garage where vehicle was stored. As of this date, Kia has not had the opportunity to inspect this vehicle and thus a determination of the cause of the fire has not been made.
186	[redacted]	07/23/2018	10/20/2016	[redacted]	VIN Not Provided by Customer; KMA could not Identify VIN.	OPTIMA	2013	In VOQ dated 7/23/18, customer reported smoke appeared under driver's side of vehicle while driving. Customer pulled vehicle to side of the road. Fire department extinguished fire. Customer identified "manufacturer made aware of the failure." No injuries reported. KMA has no record of customer contacting KMA Consumer Affairs (CA) regarding this issue. Unable to confirm without full VIN. Since Kia was not given an opportunity to inspect this vehicle a determination of the cause of fire could not be made.

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187	[redacted]	07/25/2018	07/20/2018	[redacted]	5XXGR4A62EG[redacted]	OPTIMA	2014	In VOQ dated 7/25/18, customer reported engine started "making a grinding sounds, lost complete power and stalled out" and "would not turn on." Customer pushed the vehicle into a parking lot with the assistance of two individuals. After an hour, the "car started smoking and caught fire from the engine bay." Vehicle was a total loss. No injuries were reported. Customer contacted KMA Consumer Affairs (CA) on 7/23/18 and reported check engine light came on, engine started grinding and stalled. After an hour being parked in U-Haul parking lot the vehicle caught on fire. Customer notified the following morning. On 8/16/18, customer's insurance company inspected vehicle and determined fire originated in engine but cause could not be confirmed as the remains of the radiator and cooling fan motor were not recovered from the loss location. KMA engineers subsequently inspected the vehicle on 11/14/18. KMA determined that engine compartment fire may have been caused by starter failure. Kia settled with insurance company.
188	[redacted]	07/28/2018	06/27/2018	[redacted]	5XYKT3A1XBG[redacted]	SORENTO	2011	In VOQ dated 7/28/18, customer reported that as she pulled into parking spot, black smoke started coming out from the hood. Customer turned car off and waited for smoke to stop, opened hood, checked fluids and found no issue. Four hours later while parking vehicle, black smoke came out from under the hood. She looked under the hood after the smoke cleared, no issue found. Less than five minutes later, customer heard a loud popping noise from under the hood and front of car "engulfed in flames" The fire department extinguished the fire. No reported injuries. Customer contacted KMA Consumer Affairs (CA) on 7/28/18 via the Web. KMA left voicemail for consumer on 8/6/18. Call returned by customer on 8/23/18. Vehicle was to be inspected by customer's insurance company. KMA unable to attend and requested copy of cause and origin report once inspection completed. No further contact by customer or insurance company.

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189	[redacted]	07/30/2018	07/26/2018	[redacted]	5XXGN4A76DG[redacted]	OPTIMA	2013	In VOQ dated 7/30/18, customer stated engine died while driving and all of the lights illuminated on the dashboard. Customer coasted vehicle to a stop, opened the hood and noticed a burning smell. Upon closer observation, customer noticed engine was on fire. The fire department extinguished the fire. No injuries reported. Customer contacted KMA Consumer Affairs (CA) on 7/27/18, and reported front of vehicle caught on fire. Customer requested that Kia make things right. KMA requested customer send photos for further review. Customer subsequently identified she had settled with insurance company. KMA contacted insurer and asked whether vehicle to be inspected. Insurer advised investigation had not been completed. As of 10/2/18 , no further contact by insurance company or customer. Kia has not had an opportunity to inspect this vehicle and thus a determination of the cause of fire could not be made.
190	[redacted]	08/03/2018	01/01/2011	[redacted]	5XYKUDA14BG[redacted] (VIN Not Provided By Customer; Identified by KMA)	SORENTO	2011	In VOQ dated 8/3/18, customer reported while stationary at traffic light with air conditioning running, “a burning and exhaust odor entered the cabin through vents.” Vehicle taken to dealer where customer advised “carbon was building in the catalytic converter.” Vehicle was repaired. No reported injuries. Customer never contacted Kia. The burning odor described by customer unrelated to fire. Information provided is inconsistent with a fire a or other thermal event.
191	[redacted]	08/03/2018	07/04/2018	[redacted]	KNDJT2A57D7[redacted]	SOUL	2013	In VOQ dated 8/3/18, customer reported an “abnormal odor” was observed outside of vehicle. Approximately 45 minutes later, the vehicle caught on fire. The fire department extinguished the fire. Fire marshal “diagnosed that the wiring in front of the engine compartment caused the fire.” The vehicle was destroyed. No injuries reported. Customer contacted KMA Consumer Affairs (CA) on 7/6/18 requesting help with replacing vehicle after fire. KMA third party fire investigator inspected vehicle on 11/5/18 and determined cause or origin of fire could not be determined due to extent of damage. Customer's insurer paid entire claim amount. KMA offered goodwill to customer for out of pocket expenses associated with incident.

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192	[redacted]	08/06/2018	03/19/2018	[redacted]	KNAGN4A69B5[redacted]	OPTIMA	2011	In VOQ dated 8/6/18, customer reported her vehicle stalled, check engine and tire pressure warning indicators illuminated and black smoke emerged from engine compartment. After pulling over, customer noticed flames under the hood and extinguished fire. Vehicle was towed to dealer where it was diagnosed that "the engine block failed and the engine needed replacement." Customer also mentioned that vehicle was at dealer for evaluation per 17V-224. Vehicle was not repaired. No reported injuries. Customer contacted KMA Consumer Affairs (CA) on 3/27/18 inquiring about a rental car while vehicle was having engine replaced at dealer. No reference by customer that vehicle had caught on fire during call. On 3/29/18 dealer contacted KMA and advised vehicle would not start, motor locked and that "rod exited through assembly." Dealer made no reference regarding vehicle catching on fire.
193	[redacted]	08/13/2018	08/12/2018	[redacted]	5XYKT3A63DG[redacted] (VIN Not Provided By Customer; Identified by KMA)	SORENTO	2013	In VOQ dated 8/13/18, customer stated while stopped at a red light, smoke started coming out from under hood. Customer proceeded through intersection once light turned green and smoke came through vents and flames identified under hood. Customer proceeded to side of road and exited vehicle. Vehicle "engulfed in flames." No injuries reported On 8/13/18 customer contacted KMA Consumer Affairs (CA) and reported vehicle had caught on fire. Vehicle's engine had previously been replaced under SC147 in June 2018. Kia's third party fire investigator inspected vehicle on 8/31/18. Inspection revealed no evidence of hole in block, however, due to extent of damage in the engine compartment an exact cause for the fire could not be determined. Due to described circumstances possible cause of fire due to improperly torqued fuel pipe to fuel pump as referenced in Recall 18V907.
194	[redacted]	08/13/2018	08/03/2018	[redacted]	5XYKT3A63EG[redacted]	SORENTO	2014	In VOQ dated 8/13/18, customer reported he saw smoke from under hood when engine was turned off. The vehicle then "burst into flames." The fire department extinguished fire. Customer stated cause of fire was "unknown." No reported injuries. Customer contacted KMA Consumer Affairs (CA) on 8/13/18 stating vehicle caught on fire. Customer identified insurer had inspected vehicle and later reported had settled with insurer. KMA attempted to contact insurer to inspect but number no longer valid. No further contact by customer or insurer. Kia has not had an opportunity to inspect this vehicle and thus a determination of the cause of fire could not be made.

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	ODI NO.	REPORT DATE	INCIDENT DATE	CUSTOMER NAME	VIN	MODEL	MY	KIA ASSESSMENT
195	[redacted]	08/13/2018	07/10/2018	[redacted]	5XYKT4A62EG[redacted]	SORENTO	2014	In VOQ dated 8/13/18, customer's husband was driving home when the vehicle started shaking. He pulled over and black smoke was coming out of the vehicle. He turned car off, exited and within and "a few seconds after the car exploded." Customer states incident was reported to Kia. Kia has no record of contact being to KMA Consumer Affairs (CA). Thus, Kia did not have an opportunity to inspect this vehicle and a determination of the cause of fire of could not be made.
196		08/13/2018	07/08/2018		5XYKTDA6XCG[redacted]	SORENTO	2012	In VOQ dated 8/13/18, customer's vehicle stalled while driving and noticed steam/smoke come out from front end. Customer pulled over, stopped and she realized vehicle was on fire. Customer reported "flames shot out from under that car causing 3rd degree burns to the back calf on [her] left leg" when she opened the door. Kia has no record of contact being to KMA Consumer Affairs (CA). Thus, Kia did not have an opportunity to inspect this vehicle and a determination of the cause of fire of could not be made.
197		08/17/2018	08/16/2018		KNDJN2A27E7[redacted]	SOUL	2014	In VOQ dated 8/17/18, customer reported daughter's vehicle started running rough and smoke came out from under hood while driving. Daughter pulled over and vehicle was on fire underneath engine. Customer identified melted engine parts (piston heads, connecting rods) found on ground. Kia has no record of contact being to KMA Consumer Affairs (CA). Thus, Kia did not have an opportunity to inspect this vehicle and a determination of the cause of fire of could not be made.
198		08/18/2018	04/29/2018		KNDJT2A6XD7[redacted]	SOUL	2013	In VOQ dated 8/18/19, customer stated wife was driving vehicle, heard a knocking sound and pulled over. Wife was informed by a passerby that flames were coming from the bottom of the car. Customer stated "It turns out that a rod went through the engine block and leaked all the oil out of the car." No reported injuries. Customer contacted KMA Consumer Affairs (CA) on 4/30/18 to advise about engine blowing out and whether there were any recalls or warranties that covered the repair. Dealer diagnosed hole in block. Customer provided goodwill assistance to cover costs of engine since vehicle out of warranty. Offer accepted. Fire likely caused by hole in block and oil making contact with hot engine components.

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	ODI NO.	REPORT DATE	INCIDENT DATE	CUSTOMER NAME	VIN	MODEL	MY	KIA ASSESSMENT
199	[redacted]	08/21/2018	08/11/2018	[redacted] (Customer misspelled first name; corrected by KMA)	5XYKT3A65CG[redacted]	SORENTO	2012	In VOQ dated 8/21/18, customer reported vehicle stalled, check engine light illuminated and black smoke appeared. Customer informed by passing driver vehicle "was being engulfed in flames." No injuries reported. Customer contacted KMA Consumer Affairs (CA), on 8/23/18 and inquired about her vehicle that caught fire after SC147. Customer advised had settled with insurance company. Kia requested permission to inspect vehicle. KMA's third party fire investigator inspected vehicle on 10/3/18 and determined cause of fire was due to hole in block. KMA offered and customer accepted goodwill payment to cover incidentals and interrupted vacation.
200	[redacted]	08/22/2018	08/18/2018	[redacted]	5XYKT3A69CG[redacted]	SORENTO	2012	In VOQ dated 8/22/18, customer stated "entire engine suddenly burst into flames" while driving and that "the fire spread with such speed and the thick black smoke was so strong," the vehicle was "completely engulfed" within minutes. No reported injuries. On 2/29/19, KMA Consumer Affairs (CA) received an email from customer's insurer regarding the August 2018 fire incident. Prior to this time, customer had not contacted Kia. A few months prior to the incident, the customer's engine had been replaced due to a vehicle no start condition and ultimate diagnosis of a seized engine. Vehicle was inspected on 4/18/19, and KMA engineer found cause of fire undetermined.
201	[redacted]	08/22/2018	08/11/2018	[redacted]	KNDJP3A58F7[redacted]	SOUL	2015	In VOQ dated 8/22/18, customer stated he heard a noise that sounded like a rock or "other road debris" hitting the bottom of vehicle. Approximately 15 seconds later, he heard a tapping noise from the engine compartment. After inspecting the vehicle, customer continued driving and noticed the noise increased and seemed as if the engine lost compression. Around this time his LCD screen told him to "get to a Kia dealer ASAP" and "then turned white." Customer drove for about another half mile and the engine light illuminated and the engine died. Customer exited vehicle and noticed "steam" coming from the hood. Opening the hood he observed "the steam was smoke and flames were shooting from the top of the engine, from under the oil cap." No reported injuries. Customer contacted KMA Consumer Affairs (CA), on 8/13/18 and reported that after hearing a metallic sound and a knocking sound his vehicle caught fire on 8/11/18. He requested assistance in obtaining a new vehicle. On the same day, dealer advised KMA that inspection of vehicle identified a "small hole hidden behind the exhaust bracket" and that "oil dripped on the exhaust from the valve cover" but could not say if that occurred before or after fire. Kia paid off customer's loan, reimbursed customer for rental expenses, gave customer a discount for customer to purchase a Soul, and provided a monetary sum in goodwill.

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	ODI NO.	REPORT DATE	INCIDENT DATE	CUSTOMER NAME	VIN	MODEL	MY	KIA ASSESSMENT
202	[redacted]	08/23/2018	04/05/2018	[redacted]	5XYKUDA68CG[redacted]	SORENTO	2012	In VOQ dated 8/23/18, customer stated on 4/5/18 her engine stalled and smoke came out of the driver's side hood. Customer exited vehicle and it "erupted into flames" and "burned within minutes". Customer had previously stated that her engine was replaced under warranty in January 2018 and less than 2 weeks later the starter was replaced. The catalytic converter was replaced in March 2018 because the "car was losing power and a strong gas odor was detected." No reported injuries. Customer never contacted Kia. Kia has not had an opportunity to inspect this vehicle and thus a determination of the cause of fire could not be made.
203		08/24/2018	07/28/2018		KNDJP3A51F[redacted]	SOUL	2015	In VOQ dated 7/28/18, customer's son reported that while driving smoke appeared from the front of the vehicle, the vehicle stalled, and "an abnormal noise" was heard. He exited the vehicle and observed that the bottom of the engine was on fire. Within minutes, the entire vehicle was on fire. The fire department extinguished the fire and deemed the vehicle a total loss. No reported injuries. Customer contacted KMA Consumer Affairs (CA) on 9/6/18 and reported that her vehicle caught fire in the beginning of August. Customer advised she had settled with insurer and vehicle was paid off by insurer but wanted Kia to replace vehicle and provide a rental. KMA CA advised it would reimburse for rental. Vehicle inspected by Kia's third party fire investigator on 10/3/18 and determined cause of fire due to hole in block.
204		08/31/2018	08/28/2018		5XXGN4A78D[redacted]	OPTIMA	2013	In VOQ dated 8/31/18, customer stated while driving she observed smoke under the hood of vehicle. After stopping, flames appeared from the engine compartment. Customer indicated engine was replaced in May 2018 pursuant to recall 17V224. Cause of this fire was "not determined." No reported injuries. Customer contacted KMA Consumer Affairs (CA) on 8/30/18 and reported that her vehicle had caught fire and that engine had previously been replaced pursuant to recall. She wanted the fire investigated and assistance with rental expenses. Customer settled with insurer. Kia reimbursed customer rental expenses and items lost in accident, as well as her insurance deductible. KMA engineers inspected vehicle on 9/26/18. Inspection revealed fire started in engine compartment and no holes in block were found. Cause of fire could not be determined at time of inspection. Based on Kia's further analysis in the later part of 2018, it appears fire likely attributed to issue identified in Recall 18V907.

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	ODI NO.	REPORT DATE	INCIDENT DATE	CUSTOMER NAME	VIN	MODEL	MY	KIA ASSESSMENT
205	[redacted]	09/05/2018	04/21/2018	[redacted]	VIN Not Provided by Customer; KMA could not Identify VIN.	SORENTO	2012	In VOQ dated 9/5/18, customer reported he heard "an abnormal noise" from the engine and the temperature gauge increase to "high." Minutes later, the top of the hood near the windshield caught on fire and "the entire hood erupted into flames." The fire department extinguished the fire and stated "the battery appeared to be the cause of the failure." No reported injuries. Kia has no record of contact being to KMA Consumer Affairs (CA). Thus, Kia did not have an opportunity to inspect this vehicle and a determination of the cause of fire of could not be made.
206		09/06/2018	06/20/2018		KNDJX3A56F7[redacted] (VIN Not Provided By Customer; Identified by KMA)	SOUL	2015	In VOQ dated 9/6/18, customer reported that his vehicle lost power without warning and smoke appeared from engine compartment on 6/20/18. A citizen extinguished the fire. Vehicle taken to dealer where it was diagnosed that the engine failed. No reported injuries. Customer never contacted Kia to report incident. Dealer reported customer had vehicle towed and on 7/19/18 inspected vehicle and advised KMA of hole in block. KMA subsequently repurchased customer's vehicle.
207		09/10/2018	09/10/2018		5XYKU4A23BG[redacted]	SORENTO	2011	In VOQ dated 9/10/18, customer stated that his wife was driving down the street when the vehicle "suddenly locked up (stopped) and the engine shut off." She noticed smoke coming from under the hood and "then within minutes the engine was in complete flames." No reported injuries. Customer contacted KMA Consumer Affairs (CA) on 9/10/18 and reported that vehicle caught fire. Customer settled with insurer. Kia's third party investigator inspected vehicle on 9/20/18. No hole in block. Cause of fire could not be determined. Kia provided additional goodwill assistance.
208		09/11/2018	05/03/2018		5XYKT3A17DG[redacted] (VIN Not Provided By Customer; Identified by KMA)	SORENTO	2013	In VOQ dated 9/11/18, customer stated vehicle caught on fire while driving. Customer alerted to fire by passing driver. No reported injuries. Customer contacted KMA Consumer Affairs (CA) on 5/9/18 and reported that her car caught fire and had to have it towed. Customer inquired about incidental expenses incurred. KMA CA made several attempts to contact customer (via phone & by letter). No response or further inquiry by customer. Kia was not given an opportunity to inspect this vehicle and thus a determination of the cause of fire could not be made.

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	ODI NO.	REPORT DATE	INCIDENT DATE	CUSTOMER NAME	VIN	MODEL	MY	KIA ASSESSMENT
209	[redacted]	09/11/2018	05/08/2018	[redacted]	5XYKUCA67CG[redacted]	SORENTO	2012	In VOQ dated 9/11/18, customer stated that while driving her vehicle made a “clanging noise”, “engine caught fire” and "pulled in parking lot before it died". No reported injuries. Customer never contacted Kia. Kia was not given an opportunity to inspect this vehicle and thus a determination of the cause of fire could not be made.
210		09/12/2018	10/07/2017		5XYKTDA65CG[redacted]	SORENTO	2012	In VOQ dated 9/12/18, customer's niece was driving when the vehicle “started making a noise.” Niece pulled over and noticed smoke. Two passersby observed “fire in the crack of the hood.” Fire chief advised fire “was definitely electrical.” No reported injuries. Customer contacted KMA Consumer Affairs (CA) on 10/9/18 and reported that her vehicle caught on fire while her niece was driving it. Approximately 10 minutes before the incident, vehicle lost power and check engine light illuminated. Customer advised was settling with insurance. Kia explained subrogation process with customer. KMA records show that vehicle had SC147 recall open/pending as of incident date.
211		09/12/2018	09/06/2018		5XYKT3A65CG[redacted]	SORENTO	2012	In VOQ dated 9/12/18, customer stated “headlight pigtail caught on fire” two weeks after having headlights replaced. Customer reported that she was told cause "must be a shortage in the wiring somewhere.” Customer never contacted Kia. Kia was not given an opportunity to inspect this vehicle and thus a determination of the cause of fire could not be made.
212		09/12/2018	09/08/2018		5XXGN4A73D[redacted]	OPTIMA	2013	In VOQ dated 9/12/18, customer reported the rear compartment of her vehicle’s engine caught on fire while driving. Fire extinguished by fire department and towed to dealer. No reported injuries. Customer contacted KMA Consumer Affairs (CA) on 9/12/18 and reported her vehicle caught fire while at a stop light. Customer later stated the “car fire was not bad.” Dealer contacted Kia on 10/4/18 and stated that the fire started in the engine bay. Technician could “not turn on vehicle as large amount of fuel sprays from high pressure flex and hard lines.” No indications of engine failure, seizure, or hole in the block. Kia made several attempts to have vehicle towed to dealer for inspection. No further contact by customer. Facts identified by dealer consistent with SC172. Cause of fire possibly related to Recall 18v907.

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	ODI NO.	REPORT DATE	INCIDENT DATE	CUSTOMER NAME	VIN	MODEL	MY	KIA ASSESSMENT
213	[redacted]	09/14/2018	09/14/2018	[redacted]	5XXGN4A79CG[redacted]	OPTIMA	2012	In VOQ dated 9/14/18, customer stated vehicle "shook and stalled without warning." During this time, customer noticed a knocking noise from the engine compartment. Customer exited the vehicle, lifted hood, and removed oil cap, noticed smoke and smelled a burning odor as smoke left vehicle. No reported injuries. Dealer contacted Kia on 9/20/2018 requesting authorization to replace engine under SC147. Dealer identified knocking noise in lower end of engine. Customer did not contact Kia. No indication circumstances described by customer related to fire.
214		09/25/2018	10/14/2016		5XYKTDA66CG	SORENTO	2012	In VOQ dated 9/25/18, customer stated that his low beam lights "continuously went out." Customer bought more lights and replaced them until "one day [he] found the driver side connector had melted." He purchased a new harness and had it wired in. About a year later, the passenger side connector "looks like it is starting to come apart, with the low beam light failing about 50% of the time." Customer "assume[s]" that this connector is "also on the way to melting." No reported injuries. Customer did not contact Kia. Kia was not given an opportunity to inspect this vehicle and thus a determination of the cause of melted connector could not be made. Facts do not support an actual fire occurred.
215		09/29/2018	09/08/2018		5XYKT3A60CG	SORENTO	2012	In VOQ dated 9/29/18, customer reported steering locked up and smoke/flame was coming from the engine. Driver exited vehicle and stated the front end of the vehicle was "engulfed in flames." No reported injuries. Customer did not contact Kia. Kia was not given an opportunity to inspect this vehicle and thus a determination of the cause of fire could not be made.
216		09/30/2018	09/29/2018		5XXGR4A66DG	OPTIMA	2013	In VOQ dated 9/30/18, customer stated car "stalled" without warning while driving and then caught on fire. Customer observed smoke and flames while pulling over. No reported injuries. Customer contacted KMA Consumer Affairs (CA) on 10/3/18, and reported that prior to her car fire, her dash lights came on and her car started shaking. Vehicle was auctioned off by police as customer did not pay to have vehicle released. Kia was not given an opportunity to inspect this vehicle and thus a determination of the cause of fire could not be made.

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	ODI NO.	REPORT DATE	INCIDENT DATE	CUSTOMER NAME	VIN	MODEL	MY	KIA ASSESSMENT
217	[redacted]	10/01/2018	06/01/2018	[redacted]	KNAGM4A72C5[redacted] (VIN Not Provided by Customer; Identified by KMA)	OPTIMA	2012	In VOQ dated 10/1/18, customer reported vehicle suddenly stalled and could not be restarted. Vehicle towed to dealer and engine replaced. At some later point in time following the engine replacement, customer heard "a loud booming noise " and observed smoke and flames coming from the engine compartment. Driver claims to have lost control and crashed into an oncoming vehicle. After exiting, "a loud explosion occurred from the vehicle." Driver sustained a minor head injury. Customer contacted KMA Consumer Affairs (CA) on 9/19/18 and reported she had her engine replaced approximately 4 to 6 weeks before her car later caught fire. She was driving when she "heard a large bang" and lost control of the vehicle. She smelled gas prior to the bang. After being hit by a semi-truck, she heard "another loud bang and the car had exploded due to the fire." She requested that Kia pay the fair market value of her vehicle. She also reported an injury to her head from exiting the vehicle. As of 10/10/18, Kia is awaiting further contact from the customer. Kia was not given an opportunity to inspect this vehicle and thus a determination of the cause of fire could not be made.
218	[redacted]	10/02/2018	10/01/2018	[redacted]	5XXGN4A77EG[redacted]	OPTIMA	2014	In VOQ dated 10/2/18, customer stated vehicle stalled, shut off, all instrument panel indicators illuminated and smelled a "strong odor of smoke inside the vehicle." He opened the hood and noticed flames. Fire department extinguished flames. No injuries reported. Customer contacted KMA Consumer Affairs (CA) on 10/2/18, and reported that her vehicle stalled and upon the opening of the hood, a fire was observed. She requested to be compensated for the vehicle. Kia repurchased the vehicle and reimbursed rental expenses. Kia's third party investigator inspected vehicle on 12/19/18. Inspection revealed that the fire originated in the rear center of the engine compartment. The fire caused by fuel leaking from the pressurized fuel system and igniting on the hot exhaust system.

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	ODI NO.	REPORT DATE	INCIDENT DATE	CUSTOMER NAME	VIN	MODEL	MY	KIA ASSESSMENT
219	[redacted]	10/03/2018	09/16/2018	[redacted]	5XXGM4A76DG[redacted]	OPTIMA	2013	In VOQ dated 10/3/18, customer reported fiancé was driving on the freeway and "had no brakes". Customer was alerted by other drivers that vehicle was on fire and reported car started to fill with smoke. Customer' fiancé was able to stop using the emergency brake. Fiancé exited the vehicle and "the car just went up in flames." Customer's vehicle had SC147 recall conducted in December 2017. Customer contacted KMA Consumer Affairs (CA) on 9/18/18, and reported that his car caught on fire while going downhill, and his brakes went out. Customer also reported his eyes may have been damaged due to smoke. Customer settled with insurance. KMA offered to review customer's out-of-pocket expenses related to incident for possible goodwill assistance. As of 3/31/19, KMA has not received any documentation from the customer for goodwill consideration. Kia hired third party to investigate vehicle on 10/1/18. Inspection revealed fire originated in the engine compartment and that an "undetermined braking failure resulted in leaking of brake fluid onto the hot exhaust, which caused the fire."
220		10/04/2018	10/03/2018		VIN Not Provided by Customer; KMA could not identify VIN.	OPTIMA	2012	In VOQ dated 10/4/18, customer reported he smelled and then saw smoke. He began to pull over and "flames began to billow from under the hood." Customer reported the brakes were not operational. No reported injuries. Customer never contacted KMA. Kia was not given an opportunity to inspect this vehicle and thus a determination of the cause of fire could not be made.
221		10/04/2018	10/02/2018		5XYKW4A26CG[redacted]	SORENTO	2012	In VOQ dated 10/4/18, customer stated vehicle "caught fire without warning" and the "power steering, brakes, and electrical went out." No injuries reported. Customer contacted KMA Consumer Affairs (CA) on 10/4/18, and reported that while his son was driving his vehicle it "burst into flames." Customer requested the fire be investigated and compensation for his loss. Customer settled with his insurance. Kia offered to reimburse customer for out-of-pocket expenses associated with incident but customer stated he did not have any such expenses not already covered by insurance. Kia hired third party to investigate vehicle on 11/17/18. Investigation revealed fire caused by hole in block.

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	ODI NO.	REPORT DATE	INCIDENT DATE	CUSTOMER NAME	VIN	MODEL	MY	KIA ASSESSMENT
222	[redacted]	10/05/2018	09/14/2018	[redacted]	5XYKT3A11BG[redacted]	SORENTO	2011	In VOQ dated 10/5/18, customer reported smoke was coming from under the hood while pulling into a parking lot. Immediately after, "flames had erupted and front end of car was completed engulfed by the time the fire department had arrived." No injuries were reported. Customer contacted KMA Consumer Affairs (CA) on 10/5/18 and reported that her car caught fire, after the ignition was turned off, the doors locked themselves automatically, and her alarm went off. Contact with consumer ceased and communications continued with insurance company. Kia hired third party to investigate vehicle on 11/5/18.Inspection revealed that the fire originated at the left front area of the engine compartment. Cause undetermined.
223		10/09/2018	09/23/2018		5XXGR4A69DG[redacted]	OPTIMA	2013	In VOQ dated 10/9/18, customer reported that she heard a "light pop noise," followed by her vehicle turning off. Customer observed fire coming from the hood of the vehicle which spread to whole front of car. No injuries reported. Customer contacted KMA Consumer Affairs (CA) on 9/24/18 and reported that the driver of her vehicle was driving when he observed a "noise like air coming through the window and a pop like a tire going." The fire subsequently started under the hood. She requested an explanation for the vehicle fire and to file a claim under the power train. Customer settled with insurer. KMA provided goodwill to customer for her insurance deductible and rental expenses. KMA hired third party to investigate vehicle fire on 10/8/18. Cause of engine compartment fire was undetermined.
224		10/09/2018	09/16/2018		KNAGM4A76E[redacted] (Customer provided incorrect VIN number; KMA provided proper VIN)	OPTIMA	2014	In VOQ dated 10/9/18, customer reported that while driving she observed a burning smell followed by smoke filling the cabin. Customer claims vehicle lost steering and braking capabilities but was able to maneuver to the side of the road. She subsequently observed her vehicle caught on fire. No reported injuries. Customer's insurer contacted KMA Consumer Affairs (CA) on 10/17/18 and reported that customer's car caught fire and provided notice of possible subrogation. Insurer subsequently had a cause and origin analysis performed on the vehicle, but the cause was undetermined due to the extent of the fire damage. Insurer consequently dropped its subrogation claim against KMA.

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	ODI NO.	REPORT DATE	INCIDENT DATE	CUSTOMER NAME	VIN	MODEL	MY	KIA ASSESSMENT
225	[redacted]	10/09/2018	10/08/2018	[redacted]	KNAGM4A77[redacted]	OPTIMA	2013	In VOQ dated 10/9/18, customer reported her vehicle "spontaneously caught on fire resulting in total loss." No reported injuries. Customer contacted KMA Consumer Affairs (CA) on 10/9/18 and reported that her vehicle caught on fire and had two prior engine replacements. She requested assistance from Kia in obtaining a new vehicle and reimbursement for expenses associated with incident. Customer settled with her insurance and KMA provided reimbursement for items lost in the fire and rental expenses
226		10/10/2018	10/06/2018		KNDJP3A50F7[redacted]	SOUL	2015	In VOQ dated 10/10/18, customer reported vehicle caught on fire while driving. Customer pulled over and "flames quickly spread throughout the vehicle." Fire extinguished by fire department. No reported injuries. Customer contacted KMA Consumer Affairs (CA) on 10/10/18 and reported that vehicle had burst into flames. He asked for information concerning a replacement vehicle. Customer also reported his engine had been previously replaced twice. Customer settled with his insurance. KMA hired a third party to inspect vehicle on 10/31/18. Inspection revealed that the fire originated in the front left quadrant area of the engine compartment. Cause could not be determined.
227		10/15/2018	09/15/2018		5XXGR4A69D[redacted]	OPTIMA	2013	In VOQ dated 10/15/18, customer reported that within 17 minutes after leaving the dealership, she noticed an "electrical smell" prior to the car catching on fire. No reported injuries. On 10/3/18, KMA Consumer Affairs (CA) received subrogation notice from customer's insurer indicating that after picking up the vehicle from the dealership following the recall repair, customer noticed a smell, followed by a loss of power and an ultimate vehicle shut down. Customer pulled the vehicle off the road and observed smoke and flames coming from under the hood. Joint inspection scheduled but was later cancelled after dealership accepted responsibility for the loss. Although Kia did not inspect the vehicle, it believes the fire was caused due to dealer repair error.

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	ODI NO.	REPORT DATE	INCIDENT DATE	CUSTOMER NAME	VIN	MODEL	MY	KIA ASSESSMENT
228	[redacted]	10/15/2018	09/30/2018	[redacted]	KNDJP3A55E7[redacted]	SOUL	2014	In VOQ dated 10/15/18, customer reported that she smelled exhaust fumes and burning wires inside the vehicle. Her instrument panel was also flickering. No reported injuries. Customer contacted KMA Consumer Affairs (CA) on 10/15/18 and reported that her radio station has been changing on its own and that she wanted her vehicle diagnosed. KMA paid for customer's vehicle diagnosis, but dealer could not duplicate concerns. No further contact from customer. No indication of fire, thus outside scope of PE19-004.
229		10/15/2018	10/04/2018		KNDJP3A53E7[redacted]	SOUL	2014	In VOQ dated 10/15/18, customer reported vehicle suddenly died, followed by black smoke emitting from the hood on the passenger side. Within approximately one minute, "the first of several explosions began and eruption of engulfing fire began to consume the vehicle." Fire department extinguished fire. Customer reported insurer could not determine cause of fire due to extent of damage. No reported injuries. Customer never contacted KMA. Kia was not given an opportunity to inspect this vehicle and thus a determination of the cause of fire could not be made.
230		10/15/2018	04/08/2018		5XXGN4A75CG[redacted] (Customer provided incorrect VIN number; KMA provided proper VIN)	OPTIMA	2012	In VOQ dated 10/15/18, customer reported that her vehicle stalled and shut off and that she heard "an abnormal noise under the hood." The vehicle was subsequently taken to a dealer and the engine was replaced under 17V224. After the engine was replaced, flames were detected under the hood. The fire department extinguished the fire. No injuries reported. Customer contacted KMA Consumer Affairs (CA) on 8/7/18 and stated that her engine caught on fire the previous night. Customer indicated she had oil change in Greenville, South Carolina on 6/4/18 and vehicle broke down on way to GA on 6/6/18. Customer also reports that she had the engine replaced by a Kia dealership in Greenville, South Carolina back in April. Engine was replaced in Malden, South Carolina prior to the vehicle fire in August. Customer requested assistance in obtaining a new vehicle. KMA offered customer goodwill, but customer declined and made an insurance claim. Multiple repair efforts make identifying cause difficult. Kia was not given an opportunity to inspect this vehicle and unable to determine.
231		10/18/2018	07/24/2018		KNDJT2A63D7[redacted]	SOUL	2013	In VOQ dated 10/18/18, customer stated that on July 24, 2018 she was using the Soul to jump start another vehicle, when it subsequently caught fire under the hood. No injuries reported. Customer never contacted KMA. Kia was not given an opportunity to inspect this vehicle and thus a determination of the cause of fire could not be made.

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	ODI NO.	REPORT DATE	INCIDENT DATE	CUSTOMER NAME	VIN	MODEL	MY	KIA ASSESSMENT
232	[redacted]	10/18/2018	08/04/2018	[redacted]	5XYKT3A6XEG[redacted]	SORENTO	2014	In VOQ dated 10/18/18, customer reported that while driving on the highway the underside of his vehicle "burst into flames." . No reported injuries. Customer did not contact KMA Consumer Affairs (CA). Thus, Kia did not have an opportunity to inspect this vehicle and a determination of the cause of fire of could not be made.
233	[redacted]	10/22/2018	09/25/2018	[redacted]	5XXGM4A73DG[redacted]	OPTIMA	2013	In VOQ dated 10/22/18, customer reported that he observed smoke underneath the hood of his vehicle. He pulled over and then heard a "popping sound" followed by the vehicle " burst[ing] into flames." The fire department extinguished the fire. No injuries reported. On 9/26/18, customer contacted KMA Consumer Affairs (CA) and reported that his vehicle caught fire. Customer witnessed no drivability issues prior to the fire. He previously had gotten his engine replaced pursuant to SC147 on 3/30/18, however, after the repairs his CEL appeared. He was informed that the CEL was on because of the transmission. Customer requested assistance getting a new vehicle. KMA CA provided goodwill assistance in paying off the vehicle and also provided reimbursement for ride share expenses incurred. Kia hired a third party to investigate the fire on 10/16/18. Inspection revealed the fire originated in the engine compartment and the cause of the fire was the ignition of the engine oil on the hot exhaust system and the catalytic converter.
234	[redacted]	10/23/2018	09/01/2018	[redacted]	5XYKT3A66DG[redacted]	SORENTO	2013	In VOQ dated 10/23/18, customer reported that while vehicle was parked but still on, smoke started coming out of the car and it caught on fire from the fuse box. Customer extinguished the fire. No reported injuries. On 9/4/18 customer contacted KMA Consumer Affairs (CA), and stated that her vehicle caught fire the previous Saturday. After pulling into a driveway, she noticed smoke coming from the hood, and observed a fire from the fuse. She requested money for a new car. KMA CA offered a goodwill repair of the vehicle, but customer has not yet accepted. Kia hired a third party to investigate vehicle on 11/8/18. Inspection revealed that the fire originated in the engine compartment, specifically at the top of the large electrical connector on the front of the power distribution box. Cause of fire could not be determined.

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	ODI NO.	REPORT DATE	INCIDENT DATE	CUSTOMER NAME	VIN	MODEL	MY	KIA ASSESSMENT
235	[redacted]	10/23/2018	10/15/2018	[redacted]	KNDJP3A5XE7[redacted]	SOUL	2014	In VOQ dated 10/23/18, customer reported she smelled a burning odor and the CEL illuminated. Dealership could not duplicate the issue. No injuries reported. Customer contacted KMA Consumer Affairs (CA), on 10/16/18 to report a burning smell in her vehicle. She was advised to take her vehicle into a dealer for diagnosis. The dealer contacted Kia and determined that the vehicle had previously been improperly serviced as the aftermarket oil filter was dripping and the drain plug gasket had not been changed. In addition, the oil burning smell was caused by a failure to put oil cap back on following oil change. Dealer recommended that oil be changed and engine washed but declined all repairs and left her vehicle at the dealership. No indication of fire.
236		10/23/2018	09/29/2018		5XXGR4A66DG[redacted]	OPTIMA	2013	See assessment for VOQ [redacted]
237		10/25/2018	09/16/2018		KNAGM4A71D5[redacted] (VIN Not Provided by Customer; Identified by KMA)	OPTIMA	2013	In VOQ dated 10/25/18, customer stated vehicle caught on fire while parked at work. The fire department determined that an electrical fire originated in the engine. Customer did not observe the fire occur. Customer claims she has undergone "mental, emotional and physical distress" from the incident. On 9/17/18 customer contacted KMA Consumer Affairs (CA), and reported that her car caught fire the previous day. The fire occurred approximately four hours after she arrived at work and left the vehicle in the parking lot. She requested KMA compensate her with another vehicle. KMA provided customer goodwill to cover the value of the vehicle, as well as incidentals lost in the fire. KMA also reimbursed customer for rental expenses. Kia's third party investigator inspected vehicle on 12/19/18. Inspection revealed that due to the time delay after the engine shut off, fire likely caused by a high resistance short to the ground or an adjacent circuit.
238		10/30/2018	10/28/2018		5XXGN4A72DG[redacted]	OPTIMA	2013	In VOQ dated 10/30/18, customer stated vehicle started smoking out the rear and lost all power. Customer pulled over and noticed flames under the hood. Fire department extinguished flames and identified cause likely due to an electrical issue. No reported injuries. Customer contacted KMA Consumer Affairs (CA) on 10/30/18 and reported that his vehicle caught fire. He inquired whether KMA would replace or pay off his vehicle. Kia's third party investigator inspected vehicle on 12/4/18. Inspection revealed two holes in the engine block that resulted in the fire. Kia repurchased vehicle, and reimbursed customer for items lost in fire.

TAB 82
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	ODI NO.	REPORT DATE	INCIDENT DATE	CUSTOMER NAME	VIN	MODEL	MY	KIA ASSESSMENT
239	[redacted]	10/31/2018	08/18/2018	[redacted]	5XXGN4A73EG[redacted]	OPTIMA	2014	In VOQ dated 10/31/18, customer stated while reversing, smoke was seen under the hood and vehicle subsequently caught on fire. Customer alleges to have sustained "scraps and bruises from escaping the vehicle." Fire department extinguished flames. Vehicle had previously been repaired under 17V224 at the same dealer prior to the incident. Customer contacted KMA Consumer Affairs (CA) on 8/20/18 and reported her "engine blew up" and caused a fire. Customer requested assistance with rental expenses. KMA provided goodwill to reimburse customer's rental. KMA inspected the vehicle on 9/14/18. Inspection revealed that the fire originated in the engine compartment but cause could not be determined.
240		11/09/2018	10/19/2018		KNAGN4A73B[redacted]	OPTIMA	2011	In VOQ dated 11/9/18, customer reported vehicle stalled and upon opening the hood, "flames appeared underneath the intake manifold." Fire department extinguished flames. Independent mechanic informed customer that the wiring harness was burnt. No reported injuries. Customer's insurer contacted KMA National Consumer Affairs (NCA) on 11/6/18 and provided notice of insured's loss. KMA requested finalized cause and origin report from insurer, but was informed that the vehicle was sold. The insurer subsequently closed the case. No further contact from customer or insurer. Kia did not have an opportunity to inspect this vehicle and a determination of the cause of fire of could not be made.
241		11/15/2018	10/15/2018		5XXGN4A7XEG[redacted]	OPTIMA	2014	In VOQ dated 11/15/18, customer reported while vehicle was stationary "smoke ascended from the hood." No reported injuries. Customer did not contact Kia. Thus, Kia did not have an opportunity to inspect this vehicle and a determination of the cause of fire of could not be made.

TAB 82
PE19-004

	ODI NO.	REPORT DATE	INCIDENT DATE	CUSTOMER NAME	VIN	MODEL	MY	KIA ASSESSMENT
242	[redacted]	11/16/2018	11/10/2018	[redacted]	KNDJP3A5XF7[redacted]	SOUL	2015	In VOQ dated 11/16/18, customer reported vehicle stalled while driving. After attempting to restart vehicle, flames were noticed under the hood. Fire department extinguished the flames. No reported injuries. Customer contacted KMA Consumer Affairs (CA) on 11/12/18 and reported vehicle caught on fire while driving home and requested Kia look into the fire and repair vehicle. On 11/26/18 customer clarified that her husband was the one driving and as he was driving up a hill, the vehicle stopped. He tried cranking it up, but a fire was coming from under the hood. Kia paid off remaining balance owed on vehicle. Kia hired a third party to investigate the fire on 12/5/18. Inspection revealed that the cause of the fire was hole in block.
243		11/18/2016	11/17/2016		5XXGR4A64DG[redacted]	OPTIMA	2013	In VOQ dated 11/18/16, customer reported that while driving oil light started flickering, heard a loud pop, and lost all engine control. Customer was still able to steered vehicle towards the off ramp. Customer noticed a dragging sound and pulled over. A passerby commented that the connecting rod on his car was dragging and emitting flames. Incident occurred on 11/17/16. No reported injuries. Customer contacted KMA Consumer Affairs (CA) on 11/17/16 regarding extended warranty engine coverage due to salvaged title on vehicle. Customer did not mention anything relating to alleged fire. Customer informed that salvage titles void warranties on vehicles. On 5/24/17, customer sought information on reimbursement for replacement engine he purchased in November 2016 because his vehicle fell under SC147. Customer reimbursed.
244		10/02/2018	09/01/2018		VIN Not Provided by Customer; KMA could not Identify VIN.	OPTIMA	2012	In VOQ dated 10/2/18, customer stated his vehicle turned off with "several flashing lights." He attempted to start that car, but was unsuccessful. Customer returned to the vehicle with jumper cables to see if it was the battery. He tried starting the car one last time and the engine caught fire. No reported injuries. Customer never contacted KMA. Kia was not given an opportunity to inspect this vehicle and thus a determination of the cause of fire could not be made.

PE19-004

KIA

TAB 1 1_PR TI S AR

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TAB 1.1 UPDATED PRODUCTION SUMMARY CHART

Series (Model Name)	MY	Engine Type	US VIN # (Thru 3/31/2019)	US Terr. VIN # (Thru 3/31/2019)	Overall VIN #
SOUL	2010	GAMMA 1.6L MPI	3,790	25	1,172,906
		BETA II 2.0L MPI	70,732	1,358	
	2011	GAMMA 1.6L MPI	9,955	0	
		BETA II 2.0L MPI	85,651	1,581	
	2012	GAMMA 1.6L GDI	40,484	2	
		NU 2.0L MPI	59,326	1,180	
	2013	GAMMA 1.6L GDI	76,627	0	
		NU 2.0L MPI	72,056	2,268	
	2014	GAMMA 1.6L GDI	69,185	117	
		NU 2.0L GDI	58,746	1,092	
	2015	GAMMA 1.6L GDI	88,109	82	
		NU 2.0L GDI	61,875	1,769	
	2016	GAMMA 1.6L MPI	0	3	
		GAMMA 1.6L GDI	104,426	242	
		NU 2.0L GDI	75,278	2,887	
	2017	GAMMA 1.6L GDI	37,150	150	
		NU 2.0L GDI	37,934	1,612	
		GAMMA 1.6L T-GDI	2,472	4	
	2018	GAMMA 1.6L GDI	39,781	127	
		NU 2.0L GDI	46,656	2,560	
		GAMMA 1.6L T-GDI	7,892	92	
	2019	GAMMA 1.6L GDI	42,164	896	
		NU 2.0L GDI	29,226	1,865	
		GAMMA 1.6L T-GDI	2,984	99	
	2020	NU 2.0L MPI	27,603	1,208	
		GAMMA 1.6L T-GDI	1,531	54	
SOUL EV	2015	80kW AC Electric	925	1	926
FORTE	2009	GAMMA 1.6L MPI	0	1	802,745
	2010	THETA II 2.0L MPI	72,896	1,164	
		THETA II 2.4L MPI	7,665	377	
	2011	THETA II 2.0L MPI	38,827	892	
		THETA II 2.4L MPI	4,666	319	
	2012	THETA II 2.0L MPI	57,322	1,572	
		THETA II 2.4L MPI	4,147	659	
	2013	THETA II 2.0L MPI	42,402	1,263	
		THETA II 2.4L MPI	2,985	471	
	2014	NU 2.0L MPI	0	2	
		NU 1.8L MPI	46,044	1,752	
		NU 2.0L GDI	33,486	666	
		GAMMA 1.6L T-GDI	134	0	
	2015	GAMMA 1.6L MPI	0	4	
		NU 2.0L MPI	0	3	
		NU 1.8L MPI	61,442	1,321	
		NU 2.0L GDI	21,501	177	
		GAMMA 1.6L T-GDI	1,820	185	
	2016	GAMMA 1.6L MPI	0	1	
		NU 1.8L MPI	75,657	1,288	
		NU 2.0L GDI	23,286	93	
		GAMMA 1.6L T-GDI	1,808	107	
	2017	GAMMA 1.6L MPI	0	1	
		GAMMA 1.6L T-GDI	668	25	
		NU 2.0L GDI	14,186	68	
		NU 2.0L MPI	114,294	1,328	

TAB 1.1 UPDATED PRODUCTION SUMMARY CHART

Series (Model Name)	MY	Engine Type	US VIN # (Thru 3/31/2019)	US Terr. VIN # (Thru 3/31/2019)	Overall VIN #
	2018	GAMMA 1.6L MPI	0	9	
		GAMMA 1.6L T-GDI	421	120	
		NU 2.0L GDI	3,042	84	
		NU 2.0L MPI	79,674	1,542	
	2019	NU 2.0L MPI	76,700	2,178	
FORTE KOUP	2010	THETA II 2.0L MPI	8,470	0	52,661
		THETA II 2.4L MPI	7,793	0	
	2011	THETA II 2.0L MPI	3,652	0	
		THETA II 2.4L MPI	4,050	0	
	2012	THETA II 2.0L MPI	5,402	0	
		THETA II 2.4L MPI	4,048	0	
	2013	THETA II 2.0L MPI	3,457	0	
		THETA II 2.4L MPI	2,970	0	
	2014	NU 2.0L GDI	4,866	0	
		GAMMA 1.6L T-GDI	1,099	0	
	2015	NU 2.0L GDI	2,289	0	
		GAMMA 1.6L T-GDI	1,595	0	
	2016	NU 2.0L GDI	1,700	0	
		GAMMA 1.6L T-GDI	1,268	0	
	2017	GAMMA 1.6L T-GDI	2	0	
CADENZA	2014	LAMBDA II 3.3L GDI	18,234	0	43,248
	2015	LAMBDA II 3.3L GDI	8,077	20	
	2016	LAMBDA II 3.3L GDI	4,166	7	
	2017	LAMBDA II 3.3L GDI	9,680	4	
	2018	LAMBDA II 3.3L GDI	2,306	2	
	2019	LAMBDA II 3.3L GDI	751	0	
	2020	LAMBDA II 3.3L GDI	0	1	
K900	2016	LAMBDA II 3.8L GDI	495	0	1,252
	2017	LAMBDA II 3.8L GDI	205	0	
	2019	LAMBDA II 3.3L T-GDI	552	0	
STINGER	2018	THETA II 2.0L T-GDI (Improved	7,322	14	29,983
		LAMBDA II 3.3L T-GDI	10,866	43	
	2019	THETA II 2.0L T-GDI (Improved	4,223	0	
		LAMBDA II 3.3L T-GDI	7,511	4	
TELLURIDE	2020	LAMBDA II 3.8L GDI	9,655	5	9,660
OPTIMA PHEV	2017	NU 2.0L GDI	1,700	0	2,515
	2018	NU 2.0L GDI	720	0	
	2019	NU 2.0L GDI	95	0	
OPTIMA HYBRID	2011	THETA II 2.4L MPI	3,901	1	67,556
	2012	THETA II 2.4L MPI	12,778	0	
	2013	THETA II 2.4L MPI	16,182	30	
	2014	THETA II 2.4L MPI	9,760	0	
	2015	THETA II 2.4L MPI	10,894	0	
	2016	THETA II 2.4L MPI	5,399	0	
	2017	NU 2.0L GDI	6,741	0	
	2018	NU 2.0L GDI	1,570	0	
	2019	NU 2.0L GDI	300	0	
RIO	2012	GAMMA 1.6L GDI	24,712	1,018	252,313
	2013	GAMMA 1.6L GDI	63,263	5,150	
	2014	GAMMA 1.6L GDI	27,698	2,419	
	2015	GAMMA 1.6L GDI	21,807	2,587	
	2016	GAMMA 1.6L GDI	34,512	2,478	
	2017	GAMMA 1.6L GDI	18,959	3,281	

TAB 1.1 UPDATED PRODUCTION SUMMARY CHART

Series (Model Name)	MY	Engine Type	US VIN # (Thru 3/31/2019)	US Terr. VIN # (Thru 3/31/2019)	Overall VIN #
	2018	GAMMA 1.6L GDI	21,403	3,714	
	2019	GAMMA 1.6L GDI	16,707	2,605	
SPORTAGE	2011	THETA II 2.4L MPI	40,538	1,282	533,094
		THETA II 2.0L T-GDI	3,273	0	
	2012	THETA II 2.4L MPI	38,524	1,211	
		THETA II 2.0L T-GDI	2,284	0	
	2013	THETA II 2.4L MPI	39,117	2,001	
		THETA II 2.0L T-GDI	2,690	152	
	2014	THETA II 2.4L GDI	31,324	616	
		THETA II 2.0L T-GDI	2,682	10	
	2015	THETA II 2.4L GDI	42,720	986	
		THETA II 2.0L T-GDI	457	11	
		NU 2.0L MPI	0	5	
	2016	THETA II 2.4L GDI	44,769	1,159	
		THETA II 2.0L T-GDI	1,378	16	
		NU 2.0L MPI	0	11	
	2017	THETA II 2.4L GDI (Improved)	96,264	1,704	
		THETA II 2.0L T-GDI (Improved	11,224	97	
		NU 2.0L MPI	0	13	
	2018	THETA II 2.4L GDI (Improved)	68,122	867	
		THETA II 2.0L T-GDI (Improved	4,966	20	
		NU 2.0L MPI	0	1	
	2019	THETA II 2.4L GDI (Improved)	63,926	1,176	
		THETA II 2.0L T-GDI (Improved	3,687	43	
	2020	THETA II 2.4L GDI (Improved)	21,707	419	
		THETA II 2.0L T-GDI (Improved	1,642	0	
OPTIMA	2009	THETA II 2.4L MPI	33,824	93	1,093,417
	2010	THETA II 2.4L MPI	23,714	169	
	2011	THETA II 2.4L GDI	50,050	197	
		THETA II 2.0L T-GDI	11,409	0	
	2012	THETA II 2.0L T-GDI	23,662	75	
		THETA II 2.4L GDI	72,333	196	
	2013	THETA II 2.0L T-GDI	36,771	235	
		THETA II 2.4L GDI	156,566	282	
	2014	THETA II 2.0L T-GDI	11,643	53	
		THETA II 2.4L GDI	88,312	260	
	2015	THETA II 2.0L T-GDI	18,644	90	
		THETA II 2.4L GDI	196,155	305	
	2016	GAMMA 1.6L T-GDI	5,772	0	
		THETA II 2.0L T-GDI (Improved	13,244	49	
		THETA II 2.4L GDI (Improved)	109,234	250	
	2017	GAMMA 1.6L T-GDI	1,600	0	
		THETA II 2.0L T-GDI (Improved	4,081	15	
		THETA II 2.4L GDI (Improved)	51,800	135	
	2018	GAMMA 1.6L T-GDI	1,260	0	
		THETA II 2.0L T-GDI (Improved	5,325	43	
		THETA II 2.4L GDI (Improved)	88,959	169	
	2019	THETA II 2.4L GDI (Improved)	74,628	94	
		GAMMA 1.6L T-GDI	7,406	0	
		THETA II 2.0L T-GDI (Improved	4,309	6	
	2011	LAMBDA II 3.5L MPI	16,223	682	
	2012	LAMBDA II 3.5L MPI	33,142	859	
	2013	LAMBDA II 3.5L MPI	0	0	

TAB 1.1 UPDATED PRODUCTION SUMMARY CHART

Series (Model Name)	MY	Engine Type	US VIN # (Thru 3/31/2019)	US Terr. VIN # (Thru 3/31/2019)	Overall VIN #
SEDONA	2014	LAMBDA II 3.5L MPI	13,409	565	209,733
	2015	LAMBDA II 3.3L GDI	28,723	225	
	2016	LAMBDA II 3.3L GDI	49,638	507	
	2017	LAMBDA II 3.3L GDI	35,957	632	
	2018	LAMBDA II 3.3L GDI	16,702	333	
	2019	LAMBDA II 3.3L GDI	11,462	674	
SORENTO	2011	THETA II 2.4L MPI	106,418	1,000	1,071,315
		LAMBDA II 3.5L MPI	61,120	233	
	2012	THETA II 2.4L MPI	20,987	282	
		THETA II 2.4L GDI	47,262	582	
		LAMBDA II 3.5L MPI	38,826	42	
	2013	THETA II 2.4L MPI	16,919	173	
		THETA II 2.4L GDI	43,935	467	
		LAMBDA II 3.5L MPI	39,749	69	
	2014	THETA II 2.4L GDI	72,887	784	
		LAMBDA II 3.3L GDI	38,384	41	
	2015	THETA II 2.4L GDI	62,254	0	
		LAMBDA II 3.3L GDI	33,902	0	
	2016	THETA II 2.4L GDI (Improved)	76,873	277	
		LAMBDA II 3.3L GDI	66,807	64	
		THETA II 2.0L T-GDI (Improved	15,098	21	
	2017	THETA II 2.4L GDI (Improved)	61,035	80	
		LAMBDA II 3.3L GDI	60,810	69	
		THETA II 2.0L T-GDI (Improved	7,123	30	
	2018	THETA II 2.4L GDI (Improved)	35,106	109	
		LAMBDA II 3.3L GDI	34,157	44	
		THETA II 2.0L T-GDI (Improved	2,255	16	
	2019	THETA II 2.4L GDI (Improved)	62,869	146	
		LAMBDA II 3.3L GDI	61,936	74	
RONDO	2009	THETA II 2.4L MPI	16,616	88	18,533
	2010	THETA II 2.4L MPI	1,663	55	
	2011	THETA II 2.4L MPI	0	111	
		Total # of VINs:	5,275,678	86,179	5,361,857

PE19-004

KIA

TAB 2 1_Re uest o 2 _B e do n t_ BI E 5 1 19 o e ted 6 28 19

KIA SORENTO

	2011MY					2012MY					2013MY					2014MY					
ALLEGED DEFECT CATEGORY	**A**	**B**	**C**	**D**	**Total**	**A**	**B**	**C**	**D**	**Total**	**A**	**B**	**C**	**D**	**Total**	**A**	**B**	**C**	**D**	**Total**	**TOTAL**
Consumer Complaints	3	6	0	0	**9**	14	31	1	0	**46**	6	32	1	2	**41**	4	12	3	3	**22**	**118**
Field Reports	0	0	0	0	**0**	0	0	0	0	**0**	0	1	0	0	**1**	0	0	0	0	**0**	**1**
Techline Reports	0	1	0	0	**1**	1	3	0	0	**4**	0	4	0	0	**4**	3	2	2	0	**7**	**16**
Reports Involving Injury	0	0	0	0	**0**	0	0	0	0	**0**	0	1	0	0	**1**	0	1	0	0	**1**	**2**
Reports Involving Crash Due to Fire	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	**0**
Reports Involving Fatality	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**		0	0	0	**0**	**0**
Property Damage Claims	0	0	0	2	**2**	1	1	0	0	**2**	0	2	0	1	**3**	0	1	0	0	**1**	**8**
Arbitrations	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	**0**
Lawsuits/ Claims	0	1	0	2	**3**	1	1	0	2	**4**	0	1	0	1	**2**	0	0	0	0	**0**	**9**

KIA OPTIMA

	2011MY					2012MY					2013MY					2014MY					
ALLEGED DEFECT CATEGORY	**A**	**B**	**C**	**D**	**Total**	**A**	**B**	**C**	**D**	**Total**	**A**	**B**	**C**	**D**	**Total**	**A**	**B**	**C**	**D**	**Total**	**TOTAL**
Complaints	13	22	0	5	**40**	18	28	3	3	**52**	18	58	5	6	**87**	9	10	0	4	**23**	**202**
Field Reports	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	**0**
Techline Reports	3	5	0	0	**8**	2	6	0	0	**8**	12	8	2	2	**24**	1	3	0	0	**4**	**44**
Reports Involving Injury	0	1	0	0	**1**	3	0	1	0	**4**	1	1	0	0	**2**	0	0	0	0	**0**	**7**
Reports Involving Crash Due to Fire	0	1	0	0	**1**	0	1	0	0	**1**	0	0	0	0	**0**	0	0	0	0	**0**	**2**
Reporting Involving Fatality	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	**0**
Property Damage Claims	0	3	0	1	**4**	0	0	0	0	**0**	3	6	1	2	**12**	0	0	0	1	**1**	**17**
Arbitrations	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	**0**
Lawsuits/ Claims	0	1	0	0	**1**	1	0	0	0	**1**	1	2	0	3	**6**	0	0	0	0	**0**	**8**

KIA SOUL

	2010MY					2011MY					2012MY					2013MY					2014MY					2015MY					
ALLEGED DEFECT CATEGORY	**A**	**B**	**C**	**D**	**Total**	**A**	**B**	**C**	**D**	**Total**	**A**	**B**	**C**	**D**	**Total**	**A**	**B**	**C**	**D**	**Total**	**A**	**B**	**C**	**D**	**Total**	**A**	**B**	**C**	**D**	**Total**	**TOTAL**
Complaints	0	1	2	2	**5**	0	1	2	0	**3**	1	0	0	1	**2**	5	0	0	1	**6**	11	10	0	3	**24**	24	11	2	3	**40**	**80**
Field Reports	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	**0**
Techline Reports	0	0	0	0	**0**	0	1	0	0	**1**	0	1	0	0	**1**	0	0	0	0	**0**	2	4	1	0	**7**	2	2	0	0	**4**	**13**
Reports Involving Injury	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	1	0	0	0	**1**	1	0	0	0	**1**	**2**
Reports Involving Crash Due to Fire	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	**0**
Reports Involving Fatality	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	1	0	0	**1**	0	0	0	0	**0**	**1**
Property Damage Claims	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	1	**1**	1	0	0	0	**1**	2	0	0	0	**2**	**4**
Arbitrations	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	1	0	0	**1**	**1**
Lawsuits/ Claims	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	1	**1**	0	1	0	0	**1**	0	0	0	0	**0**	**2**

KIA CADENZA

2014MY					2015MY					2016MY					2017MY					2018MY					2019MY					
A	**B**	**C**	**D**	**Total**	**A**	**B**	**C**	**D**	**Total**	**A**	**B**	**C**	**D**	**Total**	**A**	**B**	**C**	**D**	**Total**	**A**	**B**	**C**	**D**	**Total**	**A**	**B**	**C**	**D**	**Total**	**TOTAL**
4	4	2	1	**11**	1	1	0	0	**2**	1	0	0	0	**1**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	**14**
0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	1	0	0	**1**	0	0	0	0	**0**	0	0	0	0	**0**	**1**
0	5	4	0	**9**	0	0	2	0	**2**	0	1	0	0	**1**	0	1	1	0	**2**	0	0	0	0	**0**	0	0	0	0	**0**	**14**
0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	**0**
0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	**0**
0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	**0**
0	0	0	1	**1**	1	0	0	0	**1**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	**2**
0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	**0**
0	0	0	1	**1**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	**1**

KIA FORTE

	2010MY					2011MY					2012MY					2013MY					2014MY					2015MY				
ALLEGED DEFECT CATEGORY	**A**	**B**	**C**	**D**	**Total**	**A**	**B**	**C**	**D**	**Total**	**A**	**B**	**C**	**D**	**Total**	**A**	**B**	**C**	**D**	**Total**	**A**	**B**	**C**	**D**	**Total**	**A**	**B**	**C**	**D**	**Total**
Complaints	2	11	13	2	**28**	2	7	5	0	**14**	4	21	11	3	**39**	4	10	15	2	**31**	8	41	7	7	**63**	6	14	7	3	**30**
Field Reports	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	1	0	0	0	**1**
Techline Reports	0	9	2	0	**11**	1	2	1	0	**4**	1	14	7	0	**22**	3	5	2	0	**10**	0	13	6	0	**19**	0	7	2	0	**9**
Reports Involving Injury	0	0	0	0	**0**	1	0	1	0	**2**	1	0	0	0	**1**	0	0	0	1	**1**	0	1	0	1	**2**	0	0	0	0	**0**
Reports Involving Crash Due to Fire	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**
Reports Involving Fatality	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**
Property Damage Claims	0	0	0	0	**0**	0	2	0	0	**2**	0	3	0	0	**3**	0	1	0	0	**1**	0	2	3	0	**5**	0	0	0	0	**0**
Arbitrations	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**
Lawsuits/ Claims	0	0	0	0	**0**	0	0	0	0	**0**	0	1	0	0	**1**	0	0	0	0	**0**	0	1	0	0	**1**	0	0	0	0	**0**

	2016MY					2017MY					2018MY					2019MY					
ALLEGED DEFECT CATEGORY	**A**	**B**	**C**	**D**	**Total**	**A**	**B**	**C**	**D**	**Total**	**A**	**B**	**C**	**D**	**Total**	**A**	**B**	**C**	**D**	**Total**	**TOTAL**
Complaints	2	13	10	2	**27**	2	12	10	6	**30**	0	1	1	0	**2**	0	0	0	0	**0**	**264**
Field Reports	0	0	0	0	**0**	0	0	0	0	**0**	0	1	0	0	**1**	0	0	0	0	**0**	**2**
Techline Reports	4	9	1	0	**14**	1	5	1	0	**7**	0	2	1	0	**3**	0	1	0	0	**1**	**100**
Reports Involving Injury	0	1	0	0	**1**	0	0	0	0	**0**	0	0	0	0	0	0	0	0	0	**0**	**7**
Reports Involving Crash Due to Fire	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	0	0	0	0	0	**0**	**0**
Reports Involving Fatality	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	0	0	0	0	0	**0**	**0**
Property Damage Claims	0	1	0	0	**1**	0	0	0	0	**0**	0	1	0	0	**1**	0	0	0	0	**0**	**13**
Arbitrations	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	**0**
Lawsuits/ Claims	0	0	0	0	**0**	0	0	0	0	**0**	0	1	0	0	**1**	0	0	0	0	**0**	**3**

KIA FORTE KOUP

	2010MY					2011MY					2012MY					2013MY					2014MY					2015MY				
ALLEGED DEFECT CATEGORY	**A**	**B**	**C**	**D**	**Total**	**A**	**B**	**C**	**D**	**Total**	**A**	**B**	**C**	**D**	**Total**	**A**	**B**	**C**	**D**	**Total**	**A**	**B**	**C**	**D**	**Total**	**A**	**B**	**C**	**D**	**Total**
Complaints	3	5	1	0	**9**	2	1	3	0	**6**	1	6	7	0	**14**	1	5	4	1	**11**	2	3	0	0	**5**	1	2	0	0	**3**
Field Reports	0	0	0	0	**0**	0	0	1	0	**1**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**
Techline Reports	1	2	1	0	**4**	0	1	1	0	**2**	0	3	3	0	**6**	1	4	2	0	**7**	0	1	0	0	**1**	0	0	0	0	**0**
Reports Involving Injury	0	0	0	0	**0**	1	0	0	0	**1**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	1	0	0	0	**1**
Reports Involving Crash Due to Fire	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**
Reports Involving Fatality	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**
Property Damage Claims	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**
Arbitrations	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**
Lawsuits/ Claims	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**

	2016MY					
ALLEGED DEFECT CATEGORY	**A**	**B**	**C**	**D**	**Total**	**TOTAL**
Complaints	1	0	1	1	**3**	**51**
Field Reports	0	0	0	0	**0**	**1**
Techline Reports	0	0	1	0	**1**	**21**
Reports Involving Injury	0	0	1	0	**1**	**3**
Reports Involving Crash Due to Fire	0	0	0	0	**0**	**0**
Reports Involving Fatality	0	0	0	0	**0**	**0**
Property Damage Claims	0	0	0	0	**0**	**0**
Arbitrations	0	0	0	0	**0**	**0**
Lawsuits/ Claims	0	0	0	0	**0**	**0**

KIA OPTIMA

	2009MY					2010MY					2015MY				
ALLEGED DEFECT CATEGORY	**A**	**B**	**C**	**D**	**Total**	**A**	**B**	**C**	**D**	**Total**	**A**	**B**	**C**	**D**	**Total**
Complaints	2	6	8	0	**16**	2	3	7	0	**12**	15	61	9	14	**99**
Field Reports	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	1	**1**
Techline Reports	0	3	0	0	**3**	1	1	0	0	**2**	10	21	4	0	**35**
Reports Involving Injury	0	0	0	0	**0**	0	0	0	0	**0**	0	1	0	1	**2**
Reports Involving Crash Due to Fire	0	0	0	0	**0**	0	0	0	0	**0**	0	1	0	1	**2**
Reporting Involving Fatality	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**
Property Damage Claims	0	0	0	0	**0**	0	0	0	0	**0**	2	1	0	1	**4**
Arbitrations	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**
Lawsuits/ Claims	0	0	0	0	**0**	0	1	0	0	**1**	0	2	0	1	**3**

	2016MY					2017MY					2018MY					2019MY					
ALLEGED DEFECT CATEGORY	**A**	**B**	**C**	**D**	**Total**	**A**	**B**	**C**	**D**	**Total**	**A**	**B**	**C**	**D**	**Total**	**A**	**B**	**C**	**D**	**Total**	**TOTAL**
Consumer Complaints	2	25	8	15	**50**	1	3	5	0	**9**	0	6	1	1	**8**	0	1	0	0	**1**	**195**
Field Reports	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	**1**
Techline Reports	1	31	1	0	**33**	0	4	1	0	**5**	0	0	0	0	**0**	0	1	0	0	**1**	**79**
Reports Involving Injury	0	0	1	1	**2**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	**4**
Reports Involving Crash Due to Fire	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	**2**
Reports Involving Fatality	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	**0**
Property Damage Claims	1	3	0	1	**5**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	**9**
Arbitrations	0	1	0	0	**1**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	**1**
Lawsuits/ Claims	0	1	0	0	**1**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	**5**

KIA RIO

	2012MY					2013MY					2014MY					2015MY				
ALLEGED DEFECT CATEGORY	**A**	**B**	**C**	**D**	**Total**	**A**	**B**	**C**	**D**	**Total**	**A**	**B**	**C**	**D**	**Total**	**A**	**B**	**C**	**D**	**Total**
Complaints	1	10	0	2	**13**	8	24	2	2	**36**	4	4	0	2	**10**	4	4	0	3	**11**
Field Reports	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**
Techline Reports	0	6	2	0	**8**	4	17	1	0	**22**	1	7	1	0	**9**	0	0	1	0	**1**
Reports Involving Injury	0	0	0	0	**0**	2	0	0	0	**2**	0	0	0	0	**0**	1	0	0	0	**1**
Reports Involving Crash Due to Fire	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**
Reporting Involving Fatality	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**
Property Damage Claims	0	0	0	0	**0**	2	2	0	0	**4**	0	1	0	0	**1**	0	1	0	0	**1**
Arbitrations	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**
Lawsuits/ Claims	0	1	0	1	**2**	0	3	0	0	**3**	0	1	0	0	**1**	0	0	0	0	**0**

KIA RIO

	2016MY					2017MY					2018MY					2019MY					
ALLEGED DEFECT CATEGORY	**A**	**B**	**C**	**D**	**Total**	**A**	**B**	**C**	**D**	**Total**	**A**	**B**	**C**	**D**	**Total**	**A**	**B**	**C**	**D**	**Total**	**TOTAL**
Complaints	2	7	1	1	**11**	2	1	0	0	**3**	2	0	0	0	**2**	0	0	0	0	**0**	**86**
Field Reports	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	**0**
Techline Reports	0	4	0	0	**4**	0	2	0	0	**2**	0	1	0	0	**1**	0	0	0	0	**0**	**47**
Reports Involving Injury	0	1	0	0	**1**	0	0	0	0	**0**	1	0	0	0	**1**	0	0	0	0	**0**	**5**
Reports Involving Crash Due to Fire	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	**0**
Reporting Involving Fatality	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	**0**
Property Damage Claims	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	**6**
Arbitrations	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	**0**
Lawsuits/ Claims	0	2	0	0	**2**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	**8**

RONDO

	2009MY					2010MY					
ALLEGED DEFECT CATEGORY	**A**	**B**	**C**	**D**	**Total**	**A**	**B**	**C**	**D**	**Total**	**TOTAL**
Complaints	2	2	2	1	**7**	0	0	0	0	**0**	**7**
Field Reports	0	0	0	0	**0**	0	0	0	0	**0**	**0**
Techline Reports	0	0	0	0	**0**	0	0	0	0	**0**	**0**
Reports Involving Injury	0	1	0	0	**1**	0	0	0	0	**0**	**1**
Reports Involving Crash Due to Fire	0	0	0	0	**0**	0	0	0	0	**0**	**0**
Reporting Involving Fatality	0	0	0	0	**0**	0	0	0	0	**0**	**0**
Property Damage Claims	0	0	0	0	**0**	0	0	0	0	**0**	**0**
Arbitrations	0	0	0	0	**0**	0	0	0	0	**0**	**0**
Lawsuits/ Claims	0	0	0	0	**0**	0	0	0	0	**0**	**0**

KIA SEDONA

	2011MY					2012MY					2013MY					2014MY					2015MY					2016MY				
ALLEGED DEFECT CATEGORY	**A**	**B**	**C**	**D**	**Total**	**A**	**B**	**C**	**D**	**Total**	**A**	**B**	**C**	**D**	**Total**	**A**	**B**	**C**	**D**	**Total**	**A**	**B**	**C**	**D**	**Total**	**A**	**B**	**C**	**D**	**Total**
Complaints	0	13	4	1	**18**	5	15	9	3	**32**	0	0	0	0	**0**	5	4	3	0	**12**	3	10	1	0	**14**	1	7	7	0	**15**
Field Reports	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**
Techline Reports	0	4	2	0	**6**	1	7	1	0	**9**	0	0	0	0	**0**	1	2	0	0	**3**	0	23	2	0	**25**	1	11	2	0	**14**
Reports Involving Injury	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	1	0	0	**1**
Reports Involving Crash Due to Fire	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**
Reports Involving Fatality	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**
Property Damage Claims	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	2	1	0	**3**
Arbitrations	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	1	0	0	**1**	0	0	0	0	**0**
Lawsuits/ Claims	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**

	2017MY					2018MY					2019MY					
ALLEGED DEFECT CATEGORY	**A**	**B**	**C**	**D**	**Total**	**A**	**B**	**C**	**D**	**Total**	**A**	**B**	**C**	**D**	**Total**	**TOTAL**
Complaints	1	0	0	0	**1**	0	1	0	0	**1**	0	0	0	0	**0**	**93**
Field Reports	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	**0**
Techline Reports	1	1	1	0	**3**	0	0	0	0	**0**	0	0	0	0	**0**	**60**
Reports Involving Injury	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	**1**
Reports Involving Crash Due to Fire	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	**0**
Reports Involving Fatality	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	**0**
Property Damage Claims	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	**3**
Arbitrations	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	**1**
Lawsuits/ Claims	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	**0**

KIA SPORTAGE

	2011MY					2012MY					2013MY					2014MY					2015MY					2016MY				
ALLEGED DEFECT CATEGORY	**A**	**B**	**C**	**D**	**Total**	**A**	**B**	**C**	**D**	**Total**	**A**	**B**	**C**	**D**	**Total**	**A**	**B**	**C**	**D**	**Total**	**A**	**B**	**C**	**D**	**Total**	**A**	**B**	**C**	**D**	**Total**
Complaints	13	14	11	2	**40**	23	13	5	4	**45**	19	7	13	5	**44**	2	8	5	1	**16**	3	3	8	0	**14**	2	6	2	2	**12**
Field Reports	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**
Techline Reports	3	14	1	0	**18**	2	11	3	0	**16**	5	5	11	0	**21**	0	3	0	0	**3**	0	6	2	0	**8**	0	5	0	0	**5**
Reports Involving Injury	1	0	0	0	**1**	0	0	0	0	**0**	2	0	1	0	**3**	0	0	0	0	**0**	0	0	1	0	**1**	0	0	0	0	**0**
Reports Involving Crash Due to Fire	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**
Reports Involving Fatality	0	0	0	2	**2**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**
Property Damage Claims	1	0	1	2	**4**	1	0	0	1	**2**	0	1	0	3	**4**	0	0	0	0	**0**	0	0	1	0	**1**	0	1	0	0	**1**
Arbitrations	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	1	**1**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**
Lawsuits/ Claims	0	0	1	2	**3**	0	0	0	0	**0**	0	0	0	1	**1**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**

	2017MY					2018MY					2019MY					2020MY					
ALLEGED DEFECT CATEGORY	**A**	**B**	**C**	**D**	**Total**	**A**	**B**	**C**	**D**	**Total**	**A**	**B**	**C**	**D**	**Total**	**A**	**B**	**C**	**D**	**Total**	**TOTAL**
Consumer Complaints	2	17	2	2	**23**	0	3	1	0	**4**	0	0	1	0	**1**	0	0	0	0	**0**	**199**
Field Reports	0	0	0	0	**0**	0	1	0	0	**1**	0	0	0	0	**0**	0	0	0	0	**0**	**1**
Techline Reports	1	8	1	0	**10**	0	1	1	1	**3**	0	0	0	0	**0**	0	0	0	0	**0**	**84**
Reports Involving Injury	0	1	0	0	**1**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	**6**
Reports Involving Crash Due to Fire	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	**0**
Reports Involving Fatality	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	**2**
Property Damage Claims	0	2	0	2	**4**	0	1	0	0	**1**	0	0	0	0	**0**	0	0	0	0	**0**	**17**
Arbitrations	0	0	0	1	**1**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	**2**
Lawsuits/ Claims	0	0	0	1	**1**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	**5**

KIA SORENTO

	2015MY					2016MY					2017MY					2018MY					2019MY					
ALLEGED DEFECT CATEGORY	**A**	**B**	**C**	**D**	**Total**	**A**	**B**	**C**	**D**	**Total**	**A**	**B**	**C**	**D**	**Total**	**A**	**B**	**C**	**D**	**Total**	**A**	**B**	**C**	**D**	**Total**	**TOTAL**
Complaints	20	13	20	8	**61**	18	30	30	11	**89**	4	9	7	0	**20**	3	5	2	0	**10**	0	1	2	1	**4**	**184**
Field Reports	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	1	0	0	**1**	0	0	1	0	**1**	**2**
Techline Reports	3	20	10	0	**33**	3	34	13	0	**50**	0	8	3	0	**11**	0	0	2	1	**3**	0	2	2	0	**4**	**101**
Reports Involving Injury	1	0	0	0	**1**	1	0	2	1	**4**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	**5**
Reports Involving Crash Due to Fire	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	**0**
Reports Involving Fatality	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	**0**
Property Damage Claims	0	0	0	0	**0**	2	1	2	0	**5**	0	0	0	0	**0**	0	1	0	0	**1**	0	1	0	0	**1**	**7**
Arbitrations	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	**0**
Lawsuits/ Claims	0	0	0	0	**0**	0	2	0	0	**2**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	**2**

KIA SOUL

	2016MY					2017MY					2018MY					2019MY					2020MY					
ALLEGED DEFECT CATEGORY	**A**	**B**	**C**	**D**	**Total**	**A**	**B**	**C**	**D**	**Total**	**A**	**B**	**C**	**D**	**Total**	**A**	**B**	**C**	**D**	**Total**	**A**	**B**	**C**	**D**	**Total**	**TOTAL**
Complaints	16	23	6	4	**49**	1	2	2	1	**6**	3	3	3	1	**10**	0	0	1	0	**1**	0	0	0	0	**0**	**66**
Field Reports	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	**0**
Techline Reports	3	8	2	0	**13**	0	6	2	0	**8**	0	4	0	1	**5**	0	0	1	0	**1**	0	1	0	0	**1**	**28**
Reports Involving Injury	0	0	0	0	**0**	0	0	0	0	**0**	0	0	1	0	**1**	0	0	0	0	**0**	0	0	0	0	**0**	**1**
Reports Involving Crash Due to Fire	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	**0**
Reports Involving Fatality	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	**0**
Property Damage Claims	1	1	0	0	**2**	0	0	0	0	**0**	1	0	0	0	**1**	0	0	0	0	**0**	0	0	0	0	**0**	**3**
Arbitrations	0	0	0	0	**0**	0	1	0	0	**1**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	**1**
Lawsuits/ Claims	0	1	0	1	**2**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	**2**

KIA OPTIMA HYBRID & PHEV

	2015MY					2016MY					2017MY					2018MY					2019MY					
ALLEGED DEFECT CATEGORY	**A**	**B**	**C**	**D**	**Total**	**A**	**B**	**C**	**D**	**Total**	**A**	**B**	**C**	**D**	**Total**	**A**	**B**	**C**	**D**	**Total**	**A**	**B**	**C**	**D**	**Total**	**TOTAL**
Complaints	1	2	4	1	**8**	0	0	0	0	**0**	3	1	1	0	**5**	0	0	0	0	**0**	0	0	0	0	**0**	**13**
Field Reports	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	**0**
Techline Reports	0	2	2	0	**4**	0	0	0	0	**0**	1	1	0	0	**2**	0	0	0	0	**0**	0	0	0	0	**0**	**6**
Reports Involving Injury	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	**0**
Reports Involving Crash Due to Fire	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	**0**
Reports Involving Fatality	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	**0**
Property Damage Claims	0	0	0	1	**1**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	**1**
Arbitrations	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	**0**
Lawsuits/ Claims	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	**0**

	KIA STINGER					
	2018MY					
ALLEGED DEFECT CATEGORY	A	B	C	D	Total	TOTAL
Consumer Complaints	1	4	0	2	**7**	**7**
Field Reports	0	0	0	0	**0**	**0**
Techline Reports	0	4	0	0	**4**	**4**
Reports Involving Injury	0	1	0	0	**1**	**1**
Reports Involving Crash Due to Fire	0	0	0	0	**0**	**0**
Reports Involving Fatality	0	0	0	0	**0**	**0**
Property Damage Claims	0	1	0	1	**2**	**2**
Arbitrations	0	0	0	0	**0**	**0**
Lawsuits/ Claims	0	0	0	0	**0**	**0**

	KIA TELLURIDE						
	2020MY						
ALLEGED DEFECT CATEGORY	A	B	C	D	Total		TOTAL
Consumer Complaints	0	0	0	0	**0**		**0**
Field Reports	0	0	0	0	**0**		**0**
Techline Reports	0	1	0	0	**1**		**1**
Reports Involving Injury	0	0	0	0	**0**		**0**
Reports Involving Crash Due to Fire	0	0	0	0	**0**		**0**
Reports Involving Fatality	0	0	0	0	**0**		**0**
Property Damage Claims	0	0	0	0	**0**		**0**
Arbitrations	0	0	0	0	**0**		**0**
Lawsuits/ Claims	0	0	0	0	**0**		**0**

PE19-004

KIA

TAB 6_TSB_S 15

	GROUP	MODEL
KIA	**Safety Recall**	**2017MY Sorento (UMa) 3.3L**
	NUMBER	DATE
	SC153	**November 2017**

SAFETY RECALL

SUBJECT: 3.3L LAMBDA ENGINE INSPECTION / REPLACEMENT (SC153)

This bulletin provides the procedure to inspect, and if necessary, replace the engine sub-assembly on certain 2017MY Sorento (UMa) vehicles, equipped with a Lambda engine produced from March 27, 2017 through March 30, 2017. The engine's crankshaft may not have been properly heat-treated during the manufacturing process. An improperly heat-treated crankshaft may produce a cyclic knocking noise from the engine, as well as result in the illumination of the vehicle's malfunction indicator lamp (MIL). If the warnings are ignored and the vehicle continues to be driven, the crankshaft may fail, and the vehicle may stall while in motion, increasing the risk of a crash. In addition, under certain conditions, a fire may occur. If the engine replacement is not necessary, replace the lower oil pan.

NOTE: ***If the inspection identifies that the engine sub-assembly must be replaced, the dealer should provide the customer with alternate transportation during the duration of the repairs. Dealers will be able to submit for reimbursement of alternate transportation expenses in the same manner as normal warranty claims in WebDCS.***

Before conducting the procedure, verify the vehicle is included in the list of affected VINs.

★ NOTICE

There is no charge to the vehicle owner for this repair. Under applicable law, you may not sell or otherwise deliver any affected vehicle until it has been repaired pursuant to the procedures set forth in this bulletin.

★ NOTICE

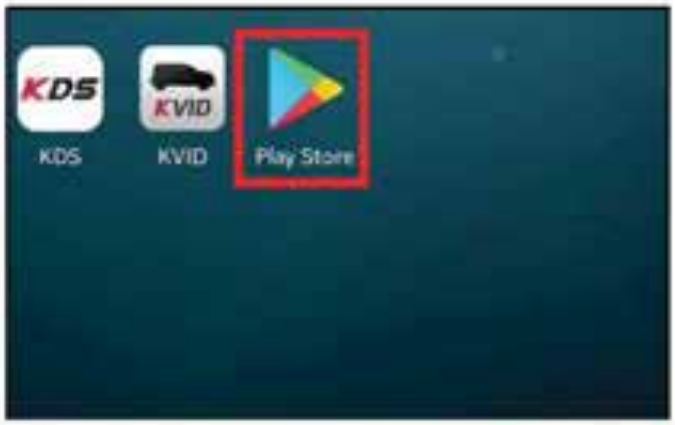
To assure complete customer satisfaction, always remember to refer to WebDCS Warranty Coverage (validation) Inquiry Screen (Service → Warranty Coverage → Warranty Coverage Inquiry) for a list of any additional campaigns that may need to be performed on the vehicle before returning it to the customer.

File Under: <Safety Campaign>

Circulate To: ☒ **General Manager** ☒ **Service Manager** ☒ **Parts Manager**
☒ **Service Advisors** ☒ **Technicians** ☒ **Body Shop Manager** ☒ **Fleet Repair**

Endoscope App Download Procedure:

1. Select the "Play Store" app on the KDS tablet.



2. Search for "OTG Endoscope" and select the app to download.

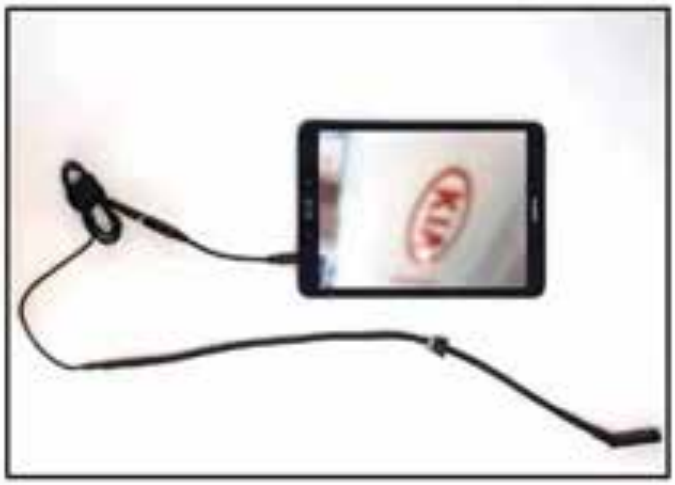


3. Select "Install".

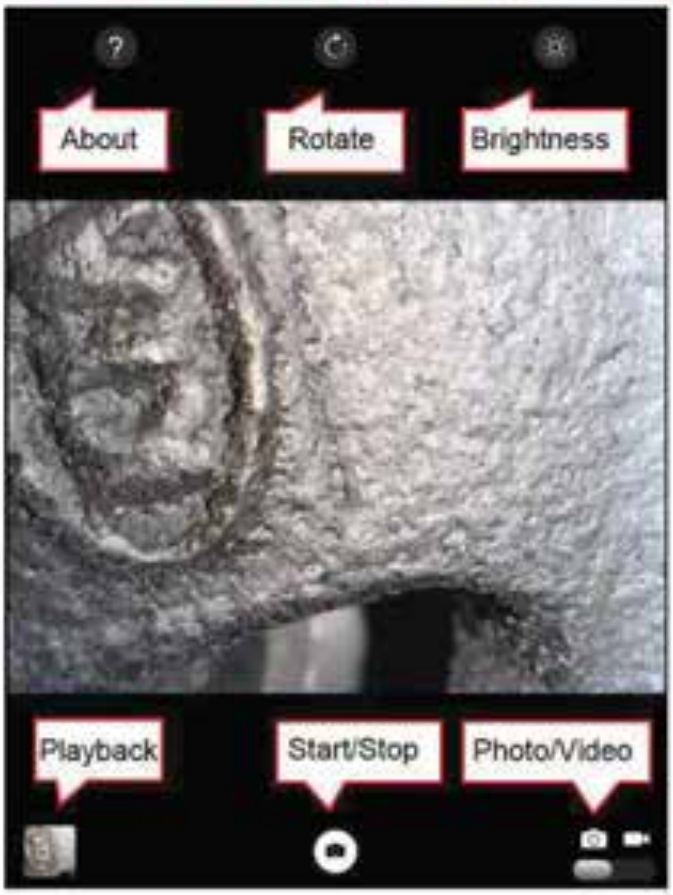


4. Connect the endoscope to the supplied OTG cable and then connect to KDS tablet. If requested to choose an app for the USB device, select "Endoscope". Select "Allow" to any pop-ups displayed.

   Note: the endoscope is specially designed for macro, up close viewing. Viewing at other distances will appear blurry. This is a normal condition.

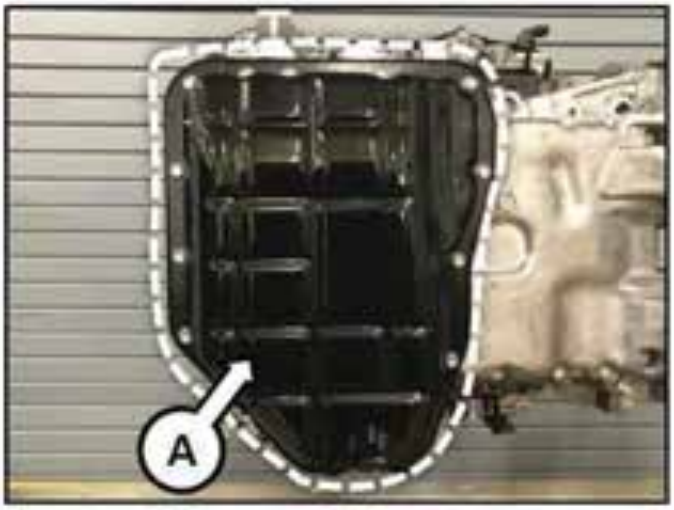


5. Included in this information is a list of button descriptions.



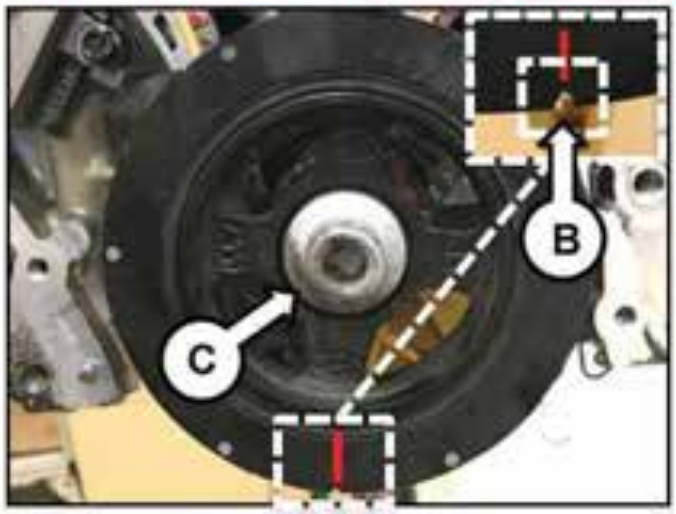
Inspection Procedure:

1. Remove the lower oil pan (A) by referring to the "Engine Mechanical System → Lubrication System → Oil Pan → Repair procedures" chapter in the applicable Shop Manual.

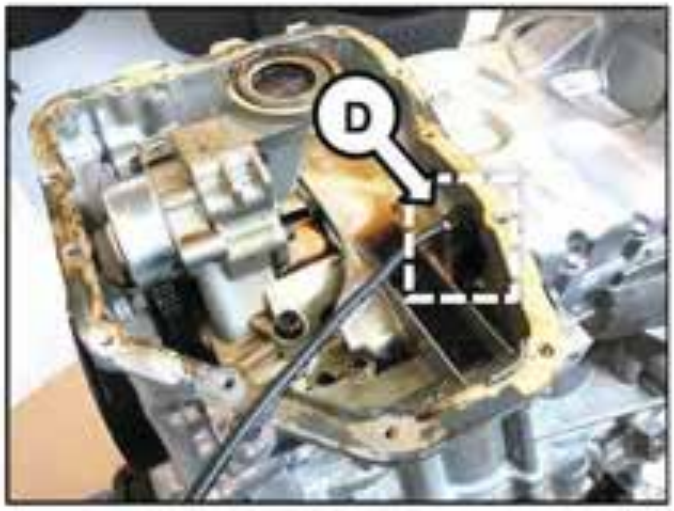


Engine assembly removed for demonstration purposes only.

2. Rotate the crankshaft and bring the timing mark (B, red mark) on the crank pulley (C) to the 6 o'clock position.



3. Insert the provided endoscope towards the rear of the engine through the oil return passage opening (D) of the upper oil pan.

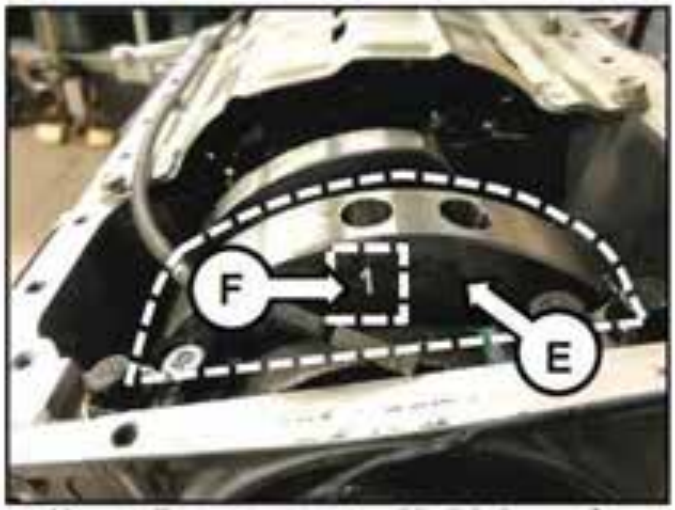


4. Locate the last crankshaft counter weight (E) (furthest away from the crank pulley). Using the endoscope, locate the lot number stamped on the back side (F) of the counter weight.

*** NOTICE**

If the lot number cannot be located, rotate the crankshaft 90° to the left or right from the timing mark (red mark) on the crankshaft pulley.





Upper oil pan was removed in this image for demonstration purposes only.
DO NOT remove the upper oil pan.

5. Take a photo of the crankshaft lot number with the endoscope and save the photo as it will be required for claim submission (attachment type "**XX: Other**" in WebDCS.)

   If the lot number is 1, replace the engine (long block) by referring to the "Engine Mechanical System → Engine and Transaxle Assembly → Engine and Transaxle Assembly → Repair procedures" chapter in the applicable Shop Manual on KGIS.

   If the lot number is 2, 3 or 4, replace the lower oil pan by referring to the "Engine Mechanical System → Lubrication System → Repair procedures" chapter in the applicable Shop Manual on KGIS and refill with new engine oil.

*** NOTICE**

Lot numbers may be partially stamped. See examples below:



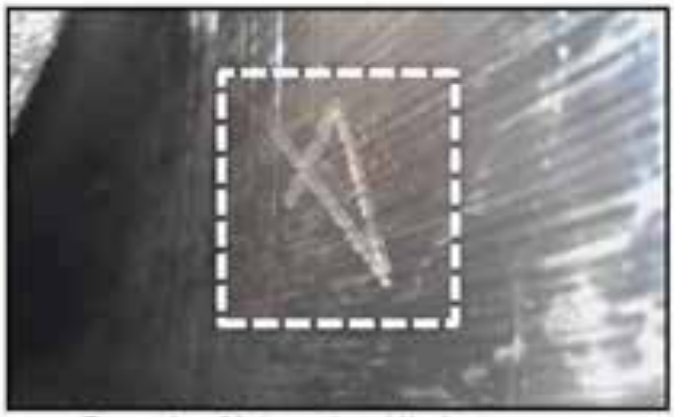
Lot #1



Lot #2



Lot #3



Example of lot number (4) shown on an endoscope.



Example of lot number (1) shown on an endoscope.



Example of lot number (3) shown on an endoscope.

6. Lot number 1: After replacement of the engine sub-assembly, verify proper operation of the vehicle with road test, and erase any stored DTCs (e.g., EPS, ESC, and TPMS) that may have been set by this procedure. Verify no leaks exist and ensure engine oil and coolant are at their proper level.

   Lot number 2, 3, or 4: After replacement of the lower oil pan, start the engine and verify proper operation and no leaks. Ensure engine oil is at the proper level.

SUBJECT: 3.3L LAMBDA ENGINE INSPECTION / REPLACEMENT (SC153)

AFFECTED VEHICLE RANGE:

Model	Production Date Range
Sorento (UMa)	March 27, 2017 through March 30, 2017

REQUIRED TOOL:

Tool Name	Tool Number		Comments
Macro Endoscope	SC153 ENDO		Auto-shipped to Dealers

NOTE: Kia Consumer Assistance Center staff will be directly contacting affected customers to schedule service appointments due to the low volume of vehicles (62). They will also request shipment of the special service tool for shipment to dealers as appointments are scheduled due to limited tool supply. Therefore, not all dealers will be receiving this specialized tool.

REQUIRED PART:

Part Name	Part Number
Lower Oil Pan	21510 3C201
Sealant (for Lower Oil Pan)	21451 33T00
Oil Filter Service Kit	26320 3CAA0
2WD Engine Sub Assembly	171R1 3CAAAQQK
AWD Engine Sub Assembly	173R1 3CAAAQQK

WARRANTY INFORMATION:
N Code: N99 C Code: C99

Claim Type	Causal P/N	Qty.	Repair Description	Labor Op Code	Op Time	Replacement P/N	Qty.
R	23110 3L100	0	(SC153) Crankshaft Inspection & Lower Oil Pan Replacement	171A48R0	1.3 M/H	21510 3C201	1
						26320 3CAA0	1
	23110 3L100	0	(SC153) Crankshaft Inspection & 2WD Engine Replacement	171A48R1	8.4 M/H	171R1 3CAAAQQK	1
						26320 3CAA0	1
	23110 3L100	0	(SC153) Crankshaft Inspection & AWD Engine Replacement	171A48R2	8.7 M/H	173R1 3CAAAQQK	1
						26320 3CAA0	1

Note: Use sublet code 'X1' with a maximum allowed amount of $13.92 for lower oil pan sealant (only applies to labor op code 171A48R0).
Use sublet code 'X2' to claim possible rental expense. 1 day maximum allowed for labor op code 171A48R0, and 5 day maximum allowed for labor op codes 171A48R1 & 171A48R2. Only if applicable, please include daily additional market surcharge in accordance with the schedule per Warranty Bulletin 2017-11 Section 2 found on KDealer.com → FIXED OPS → WARRANTY → Warranty Bulletins.
Use sublet code 'X3' with a maximum allowed amount of $19.50 for engine oil reimbursement (applies to all labor op codes). Dealer may claim max quantity of 1, for antifreeze/coolant (part#: UM040 CH012) loss (only applies to labor op codes 171A48R1 & 171A48R2).

* NOTICE

VIN inquiry data for this repair is provided for tracking purposes only. Kia retailers should reference SC153 when accessing the WebDCS system.

PE19-004

KIA

TAB 7_TSB_S 15 _R1

	GROUP	MODEL
KIA	**Safety Recall**	**2017MY Sorento (UMa) 3.3L**
	NUMBER	DATE
	SC153 (Rev 1, 12/18/2017)	**November 2017**

SAFETY RECALL

SUBJECT: 3.3L LAMBDA ENGINE INSPECTION / REPLACEMENT (SC153)

* NOTICE

This bulletin has been revised to include additional information. New/revised sections of this bulletin are indicated by a black bar in the margin area.

This bulletin provides the procedure to inspect, and if necessary, replace the engine sub-assembly on certain 2017MY Sorento (UMa) vehicles, equipped with a Lambda engine produced from March 27, 2017 through March 30, 2017. The engine's crankshaft may not have been properly heat-treated during the manufacturing process. An improperly heat-treated crankshaft may produce a cyclic knocking noise from the engine, as well as result in the illumination of the vehicle's malfunction indicator lamp (MIL). If the warnings are ignored and the vehicle continues to be driven, the crankshaft may fail, and the vehicle may stall while in motion, increasing the risk of a crash. In addition, under certain conditions, a fire may occur. If the engine replacement is not necessary, replace the lower oil pan.

NOTE: ***If the inspection identifies that the engine sub-assembly must be replaced, the dealer should provide the customer with alternate transportation during the duration of the repairs. Dealers will be able to submit for reimbursement of alternate transportation expenses in the same manner as normal warranty claims in WebDCS.***

Before conducting the procedure, verify the vehicle is included in the list of affected VINs.

* NOTICE

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* NOTICE

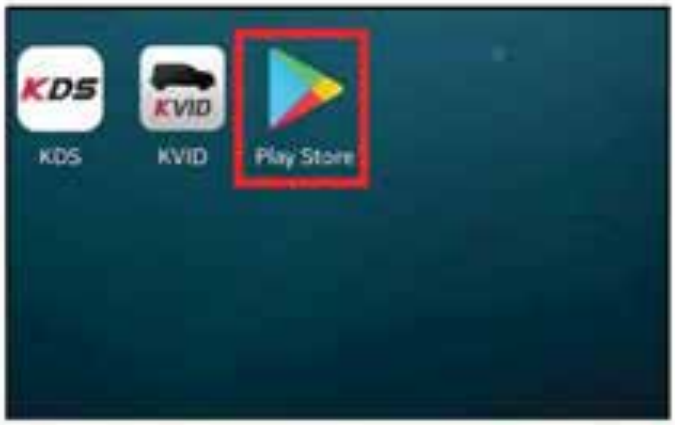
To assure complete customer satisfaction, always remember to refer to WebDCS Warranty Coverage (validation) Inquiry Screen (Service → Warranty Coverage → Warranty Coverage Inquiry) for a list of any additional campaigns that may need to be performed on the vehicle before returning it to the customer.

File Under: <Safety Campaign>

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

Endoscope App Download Procedure:

1. Select the "Play Store" app on the KDS tablet.



2. Search for "OTG Endoscope" and select the app to download.

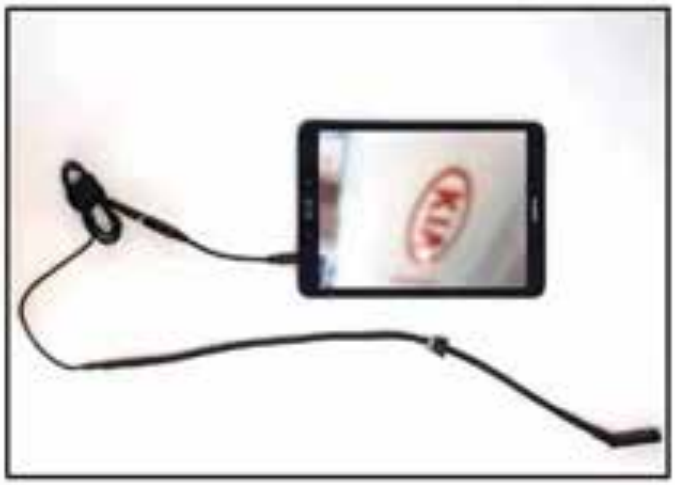


3. Select "Install".

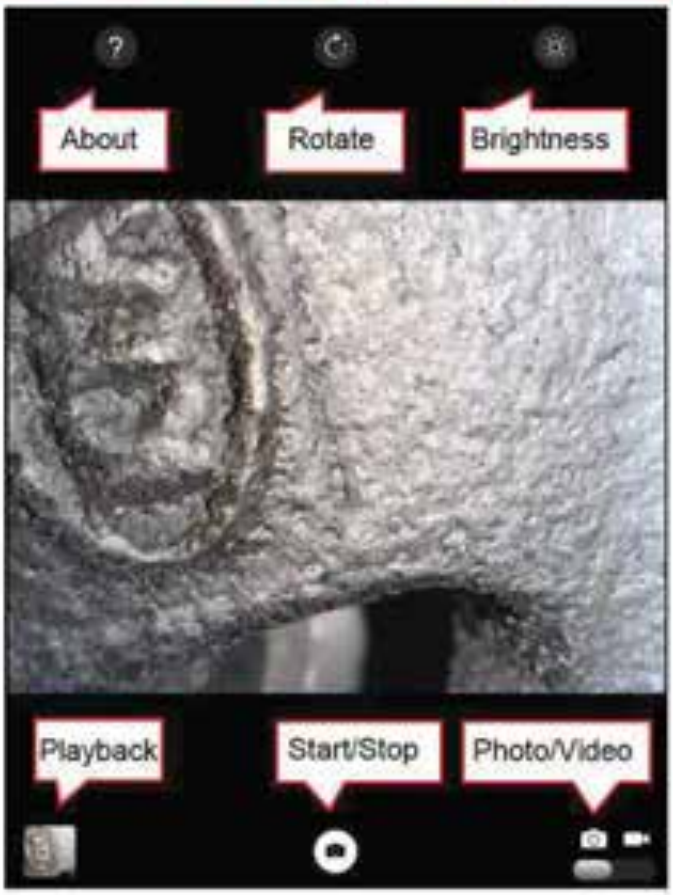


4. Connect the endoscope to the supplied OTG cable and then connect to KDS tablet. If requested to choose an app for the USB device, select "Endoscope". Select "Allow" to any pop-ups displayed.

   Note: the endoscope is specially designed for macro, up close viewing. Viewing at other distances will appear blurry. This is a normal condition.

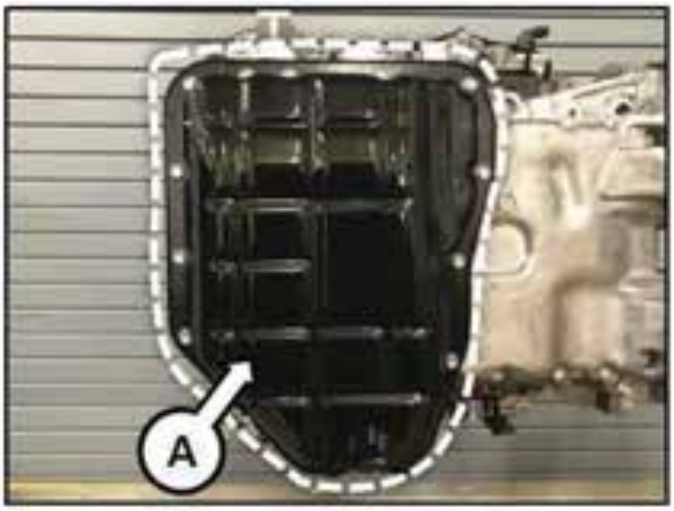


5. Included in this information is a list of button descriptions.



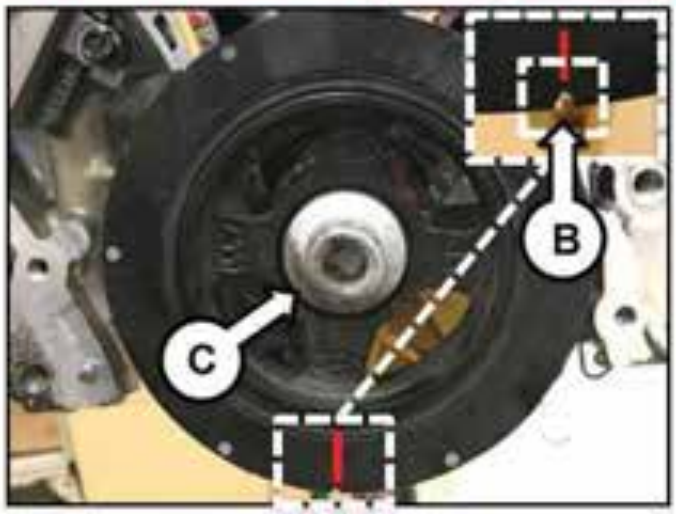
Inspection Procedure:

1. Remove the lower oil pan (A) by referring to the "Engine Mechanical System → Lubrication System → Oil Pan → Repair procedures" chapter in the applicable Shop Manual.

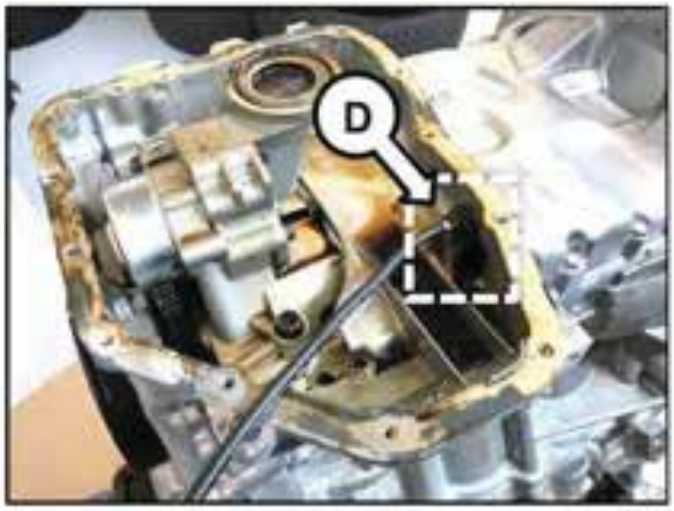


Engine assembly removed for demonstration purposes only.

2. Rotate the crankshaft and bring the timing mark (B, red mark) on the crank pulley (C) to the 6 o'clock position.



3. Insert the provided endoscope towards the rear of the engine through the oil return passage opening (D) of the upper oil pan.

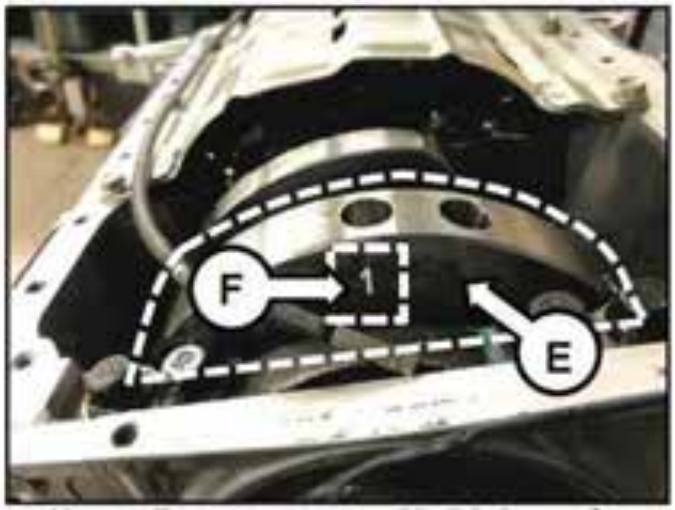


4. Locate the last crankshaft counter weight (E) (furthest away from the crank pulley). Using the endoscope, locate the lot number stamped on the back side (F) of the counter weight.

*** NOTICE**

If the lot number cannot be located, rotate the crankshaft 90° to the left or right from the timing mark (red mark) on the crankshaft pulley.





Upper oil pan was removed in this image for demonstration purposes only.
DO NOT remove the upper oil pan.

5. Take a photo of the crankshaft lot number with the endoscope and save the photo as it will be required for claim submission (attachment type "**XX: Other**" in WebDCS.)

   If the lot number is 1, replace the engine (long block) by referring to the "Engine Mechanical System → Engine and Transaxle Assembly → Engine and Transaxle Assembly → Repair procedures" chapter in the applicable Shop Manual on KGIS.

   If the lot number is 2, 3 or 4, replace the lower oil pan by referring to the "Engine Mechanical System → Lubrication System → Repair procedures" chapter in the applicable Shop Manual on KGIS and refill with new engine oil.

★ NOTICE

Lot numbers may be partially stamped. See examples below:



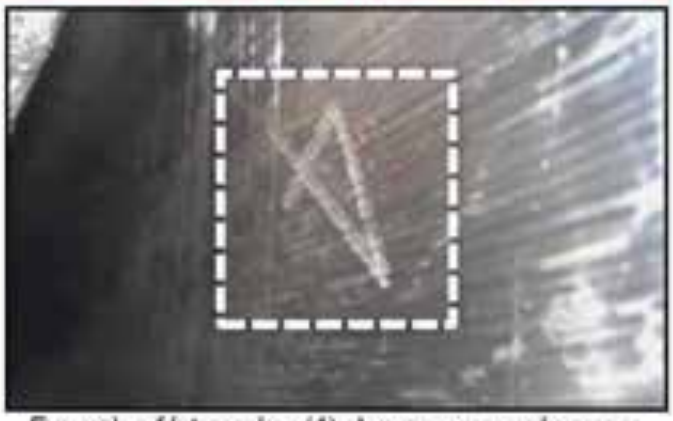
Lot #1



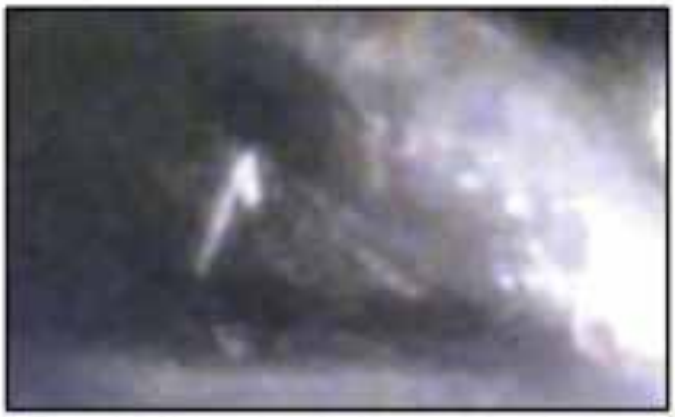
Lot #2



Lot #3



Example of lot number (4) shown on an endoscope.



Example of lot number (1) shown on an endoscope.



Example of lot number (3) shown on an endoscope.

6. Lot number 1: After replacement of the engine sub-assembly, verify proper operation of the vehicle with road test, and erase any stored DTCs (e.g., EPS, ESC, and TPMS) that may have been set by this procedure. Verify no leaks exist and ensure engine oil and coolant are at their proper level. See steps below and Parts Bulletin 20-201 0003 for details regarding engine disabling and discarding.
   1. Prior to discarding the removed engine, disable it to prevent reuse by using a large mallet and striking firmly at the center of the starter mount tab on the removed engine to break off the tab.
   2. Provide the removed starter mount tab to your dealership's Parts Department for campaign engine core charge reimbursement request processing.

   Lot number 2, 3, or 4: After replacement of the lower oil pan, start the engine and verify proper operation and no leaks. Ensure engine oil is at the proper level.

SUBJECT: 3.3L LAMBDA ENGINE INSPECTION / REPLACEMENT (SC153)

AFFECTED VEHICLE RANGE:

Model	Production Date Range
Sorento (UMa)	March 27, 2017 through March 30, 2017

REQUIRED TOOL:

Tool Name	Tool Number		Comments
Macro Endoscope	SC153 ENDO		Auto-shipped to Dealers

NOTE: Kia Consumer Assistance Center staff will be directly contacting affected customers to schedule service appointments due to the low volume of vehicles (62). They will also request shipment of the special service tool for shipment to dealers as appointments are scheduled due to limited tool supply. Therefore, not all dealers will be receiving this specialized tool.

REQUIRED PART:

Part Name	Part Number
Lower Oil Pan	21510 3C201
Sealant (for Lower Oil Pan)	UM016 CH123
Oil Filter Service Kit	26320 3CAA0
2WD Engine Sub Assembly	171R1 3CAAAQQK
AWD Engine Sub Assembly	173R1 3CAAAQQK

WARRANTY INFORMATION:

N Code: N99 C Code: C99

Claim Type	Causal P/N	Qty.	Repair Description	Labor Op Code	Op Time	Replacement P/N	Qty.
R	23110 3L100	0	(SC153) Crankshaft Inspection & Lower Oil Pan Replacement	171A48R0	1.3 M/H	21510 3C201	1
						26320 3CAA0	1
	23110 3L100	0	(SC153) Crankshaft Inspection & 2WD Engine Replacement	171A48R1	8.4 M/H	171R1 3CAAAQQK	1
						26320 3CAA0	1
	23110 3L100	0	(SC153) Crankshaft Inspection & AWD Engine Replacement	171A48R2	8.7 M/H	173R1 3CAAAQQK	1
						26320 3CAA0	1

Note: Use sublet code 'X1' with a maximum allowed amount of $13.92 for lower oil pan sealant (only applies to labor op code 171A48R0).

Use sublet code 'X2' to claim possible rental expense. 1 day maximum allowed for labor op code 171A48R0, and 5 day maximum allowed for labor op codes 171A48R1 & 171A48R2. Only if applicable, please include daily additional market surcharge in accordance with the schedule per Warranty Bulletin 2017-11 Section 2 found on KDealer.com → FIXED OPS → WARRANTY → Warranty Bulletins.

Use sublet code 'X3' with a maximum allowed amount of $19.50 for engine oil reimbursement (applies to all labor op codes). Dealer may claim max quantity of 1, for antifreeze/coolant (part#: UM040 CH012) loss (only applies to labor op codes 171A48R1 & 171A48R2).

* NOTICE

VIN inquiry data for this repair is provided for tracking purposes only. Kia retailers should reference SC153 when accessing the WebDCS system.

PE19-004

KIA

TAB 8_TSB_S 15 _R2

	GROUP	MODEL
KIA	**Safety Recall**	**2017MY Sorento (UMa) 3.3L**
	NUMBER	DATE
	SC153 (Rev 2, 2/5/2018)	**November 2017**

SAFETY RECALL

SUBJECT: 3.3L LAMBDA ENGINE INSPECTION / REPLACEMENT (SC153)

* NOTICE

This bulletin has been revised to include additional information. New/revised sections of this bulletin are indicated by a black bar in the margin area.

This bulletin provides the procedure to inspect, and if necessary, replace the engine sub-assembly on certain 2017MY Sorento (UMa) vehicles, equipped with a Lambda engine produced from March 27, 2017 through March 30, 2017. The engine's crankshaft may not have been properly heat-treated during the manufacturing process. An improperly heat-treated crankshaft may produce a cyclic knocking noise from the engine, as well as result in the illumination of the vehicle's malfunction indicator lamp (MIL). If the warnings are ignored and the vehicle continues to be driven, the crankshaft may fail, and the vehicle may stall while in motion, increasing the risk of a crash. In addition, under certain conditions, a fire may occur. If the engine replacement is not necessary, replace the lower oil pan.

NOTE: ***If the inspection identifies that the engine sub-assembly must be replaced, the dealer should provide the customer with alternate transportation during the duration of the repairs. Dealers will be able to submit for reimbursement of alternate transportation expenses in the same manner as normal warranty claims in WebDCS.***

Before conducting the procedure, verify the vehicle is included in the list of affected VINs.

* NOTICE

There is no charge to the vehicle owner for this repair. Under applicable law, you may not sell or otherwise deliver any affected vehicle until it has been repaired pursuant to the procedures set forth in this bulletin.

* NOTICE

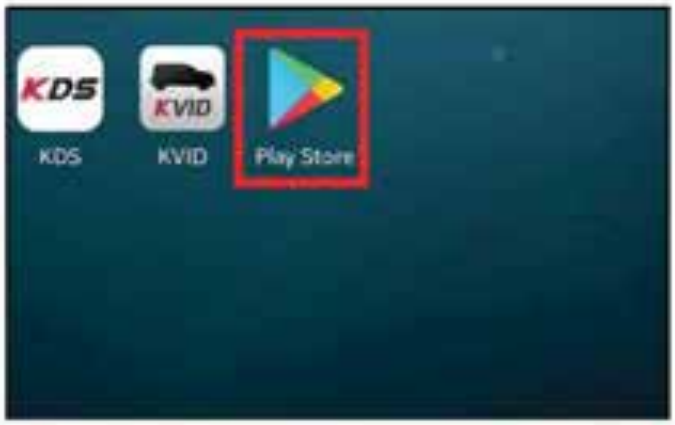
To assure complete customer satisfaction, always remember to refer to WebDCS Warranty Coverage (validation) Inquiry Screen (Service → Warranty Coverage → Warranty Coverage Inquiry) for a list of any additional campaigns that may need to be performed on the vehicle before returning it to the customer.

File Under: <Safety Recall>

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

Endoscope App Download Procedure:

1. Select the "Play Store" app on the KDS tablet.



2. Search for "OTG Endoscope" and select the app to download.

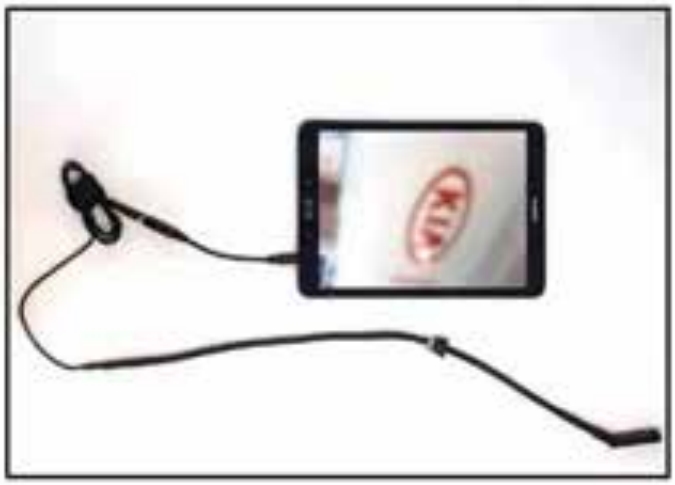


3. Select "Install".

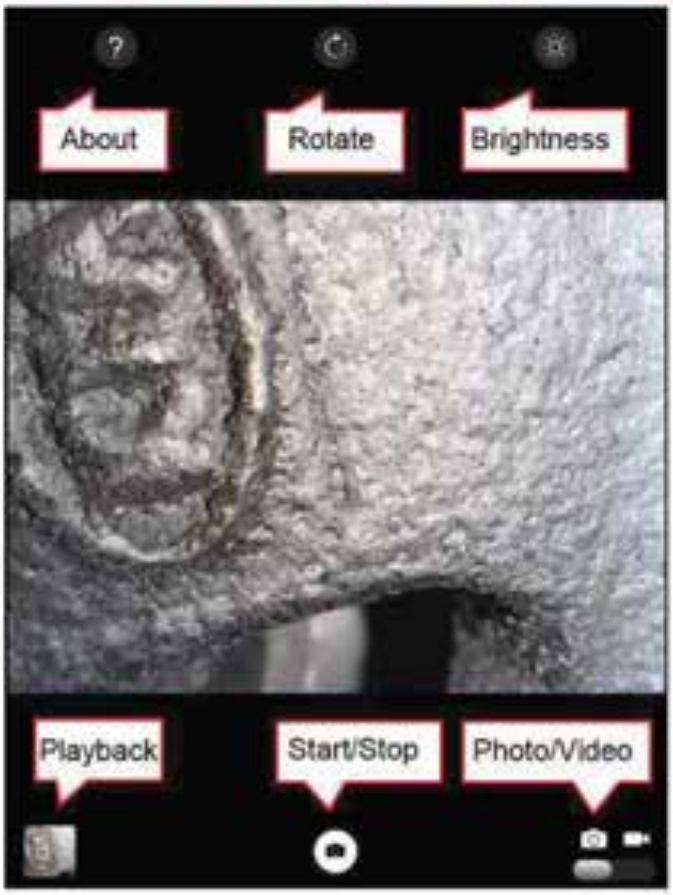


4. Connect the endoscope to the supplied OTG cable and then connect to KDS tablet. If requested to choose an app for the USB device, select "Endoscope". Select "Allow" to any pop-ups displayed.

   Note: the endoscope is specially designed for macro, up close viewing. Viewing at other distances will appear blurry. This is a normal condition.

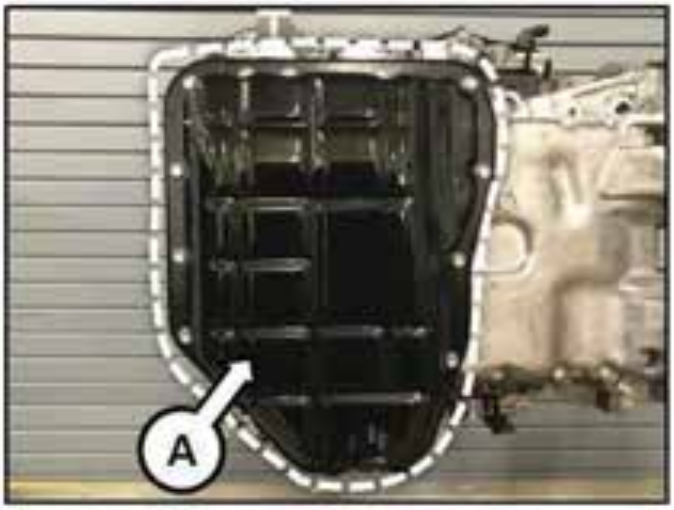


5. Included in this information is a list of button descriptions.



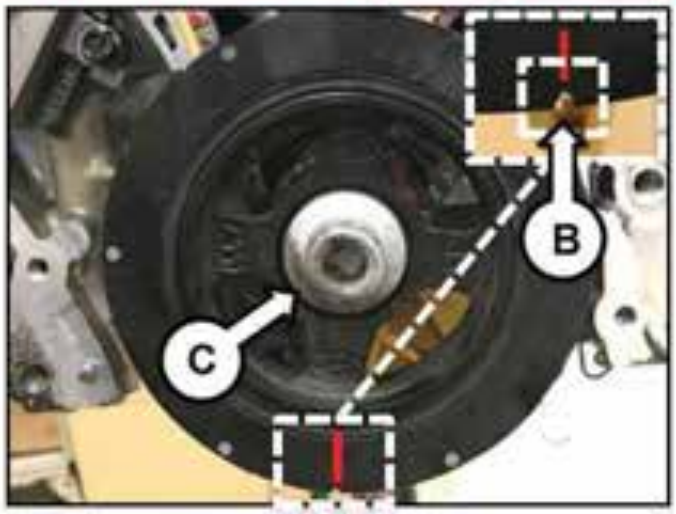
Inspection Procedure:

1. Remove the lower oil pan (A) by referring to the "Engine Mechanical System → Lubrication System → Oil Pan → Repair procedures" chapter in the applicable Shop Manual.

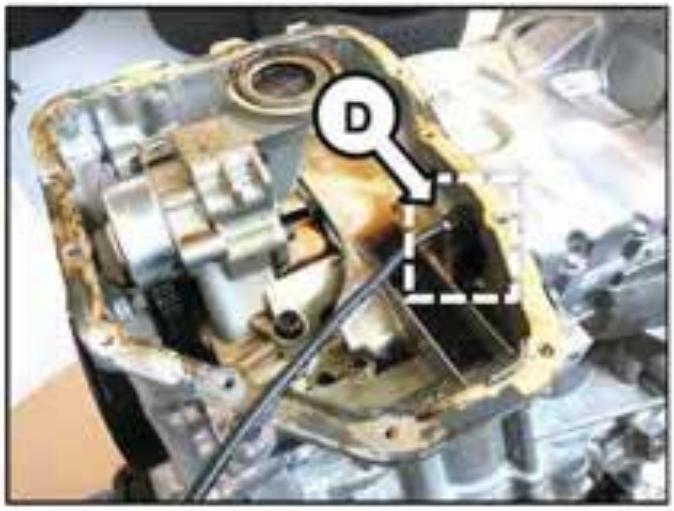


Engine assembly removed for demonstration purposes only.

2. Rotate the crankshaft and bring the timing mark (B, red mark) on the crank pulley (C) to the 6 o'clock position.



3. Insert the provided endoscope towards the rear of the engine through the oil return passage opening (D) of the upper oil pan.

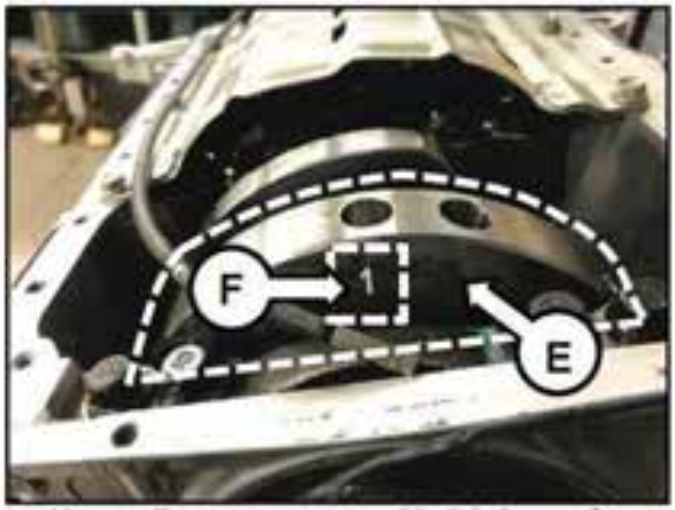


4. Locate the last crankshaft counter weight (E) (furthest away from the crank pulley). Using the endoscope, locate the lot number stamped on the back side (F) of the counter weight.

*** NOTICE**

If the lot number cannot be located, rotate the crankshaft 90° to the left or right from the timing mark (red mark) on the crankshaft pulley.



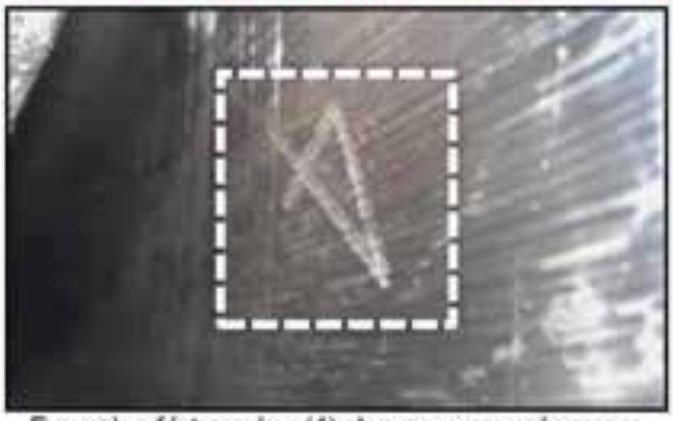


Upper oil pan was removed in this image for demonstration purposes only.
DO NOT remove the upper oil pan.

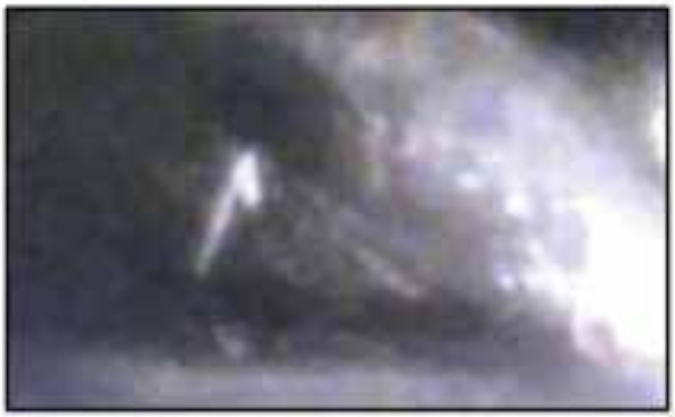
5. Take a photo of the crankshaft lot number with the endoscope and save the photo as it will be required for claim submission (attachment type "**XX: Other**" in WebDCS.)

   If the lot number is 1, replace the engine (long block) by referring to the "Engine Mechanical System → Engine and Transaxle Assembly → Engine and Transaxle Assembly → Repair procedures" chapter in the applicable Shop Manual on KGIS.

   If the lot number is 2, 3 or 4, replace the lower oil pan by referring to the "Engine Mechanical System → Lubrication System → Repair procedures" chapter in the applicable Shop Manual on KGIS and refill with new engine oil.



Example of lot number (4) shown on an endoscope.



Example of lot number (1) shown on an endoscope.



Example of lot number (3) shown on an endoscope.

★ NOTICE

Lot numbers may be partially stamped. See examples below:



Lot #1 Lot #2



Lot #3

6. Lot number 1: After replacement of the engine sub-assembly, verify proper operation of the vehicle with road test, and erase any stored DTCs (e.g., EPS, ESC, and TPMS) that may have been set by this procedure. Verify no leaks exist and ensure engine oil and coolant are at their proper level. See steps below and Parts Bulletin 20-201 0003 for details regarding engine disabling and discarding.
   1. Prior to discarding the removed engine, in a safe area, with proper protective equipment (PPE), disable it to prevent reuse by using a cut-off wheel to cut and remove the serialized portion of the starter ear from the engine block. See Parts Bulletin 20-201 0003 for details.
   2. Provide the removed starter ear to your dealership's Parts Department for campaign engine core charge reimbursement request processing.

   Lot number 2, 3, or 4: After replacement of the lower oil pan, start the engine and verify proper operation and no leaks. Ensure engine oil is at the proper level.

SUBJECT: 3.3L LAMBDA ENGINE INSPECTION / REPLACEMENT (SC153)

AFFECTED VEHICLE RANGE:

Model	Production Date Range
Sorento (UMa)	March 27, 2017 through March 30, 2017

REQUIRED TOOL:

Tool Name	Tool Number		Comments
Macro Endoscope	SC153 ENDO		Auto-shipped to Dealers

NOTE: Kia Consumer Assistance Center staff will be directly contacting affected customers to schedule service appointments due to the low volume of vehicles (62). They will also request shipment of the special service tool for shipment to dealers as appointments are scheduled due to limited tool supply. Therefore, not all dealers will be receiving this specialized tool.

REQUIRED PART:

Part Name	Part Number
Lower Oil Pan	21510 3C201
Sealant (for Lower Oil Pan)	UM016 CH123
Oil Filter Service Kit	26320 3CAA0
2WD Engine Sub Assembly	171R1 3CAAAQQK
AWD Engine Sub Assembly	173R1 3CAAAQQK

WARRANTY INFORMATION:

N Code: N99 C Code: C99

Claim Type	Causal P/N	Qty.	Repair Description	Labor Op Code	Op Time	Replacement P/N	Qty.
R	23110 3L100	0	(SC153) Crankshaft Inspection & Lower Oil Pan Replacement	171A48R0	1.3 M/H	21510 3C201	1
						26320 3CAA0	1
	23110 3L100	0	(SC153) Crankshaft Inspection & 2WD Engine Replacement	171A48R1	8.4 M/H	171R1 3CAAAQQK	1
						26320 3CAA0	1
	23110 3L100	0	(SC153) Crankshaft Inspection & AWD Engine Replacement	171A48R2	8.7 M/H	173R1 3CAAAQQK	1
						26320 3CAA0	1

Note: Use sublet code 'X1' with a maximum allowed amount of $13.92 for lower oil pan sealant (only applies to labor op code 171A48R0).

Use sublet code 'X2' to claim possible rental expense. 1 day maximum allowed for labor op code 171A48R0, and 5 day maximum allowed for labor op codes 171A48R1 & 171A48R2. Only if applicable, please include daily additional market surcharge in accordance with the schedule per Warranty Bulletin 2017-11 Section 2 found on KDealer.com → FIXED OPS → WARRANTY → Warranty Bulletins.

Use sublet code 'X3' with a maximum allowed amount of $19.50 for engine oil reimbursement (applies to all labor op codes). Dealer may claim max quantity of 1, for antifreeze/coolant (part#: UM040 CH012) loss (only applies to labor op codes 171A48R1 & 171A48R2).

★ NOTICE

VIN inquiry data for this repair is provided for tracking purposes only. Kia retailers should reference SC153 when accessing the WebDCS system.

PE19-004

KIA

TAB 9_S 15 _R

	GROUP	MODEL
KIA	**Safety Recall**	**2017MY Sorento (UMa) 3.3L**
	NUMBER	DATE
	SC153 (Rev 3, 03/29/2018)	**November 2017**

SAFETY RECALL

SUBJECT: 3.3L LAMBDA ENGINE INSPECTION / REPLACEMENT (SC153)

* NOTICE

This bulletin has been revised to include additional information. New/revised sections of this bulletin are indicated by a black bar in the margin area.

This bulletin provides the procedure to inspect, and if necessary, replace the engine sub-assembly on certain 2017MY Sorento (UMa) vehicles, equipped with a Lambda engine produced from March 27, 2017 through March 30, 2017. The engine's crankshaft may not have been properly heat-treated during the manufacturing process. An improperly heat-treated crankshaft may produce a cyclic knocking noise from the engine, as well as result in the illumination of the vehicle's malfunction indicator lamp (MIL). If the warnings are ignored and the vehicle continues to be driven, the crankshaft may fail, and the vehicle may stall while in motion, increasing the risk of a crash. In addition, under certain conditions, a fire may occur. If the engine replacement is not necessary, replace the lower oil pan.

NOTE: ***If the inspection identifies that the engine sub-assembly must be replaced, the dealer should provide the customer with alternate transportation during the duration of the repairs. Dealers will be able to submit for reimbursement of alternate transportation expenses in the same manner as normal warranty claims in WebDCS.***

Before conducting the procedure, verify the vehicle is included in the list of affected VINs.

* NOTICE

There is no charge to the vehicle owner for this repair. Under applicable law, you may not sell or otherwise deliver any affected vehicle until it has been repaired pursuant to the procedures set forth in this bulletin.

* NOTICE

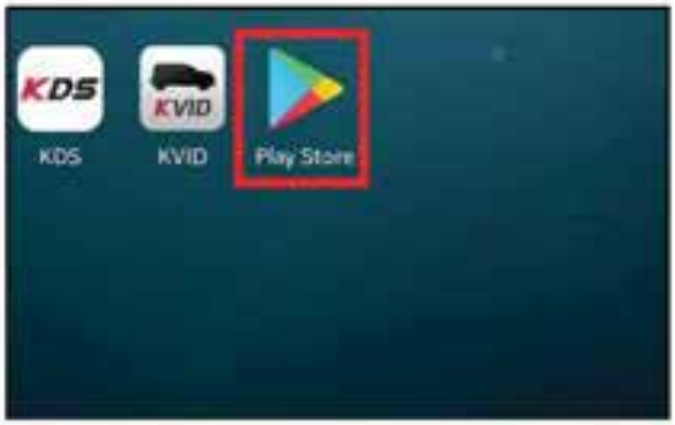
To assure complete customer satisfaction, always remember to refer to WebDCS Warranty Coverage (validation) Inquiry Screen (Service → Warranty Coverage → Warranty Coverage Inquiry) for a list of any additional campaigns that may need to be performed on the vehicle before returning it to the customer.

File Under: <Safety Recall>

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

Endoscope App Download Procedure:

1. Select the "Play Store" app on the KDS tablet.



2. Search for "OTG Endoscope" and select the app to download.

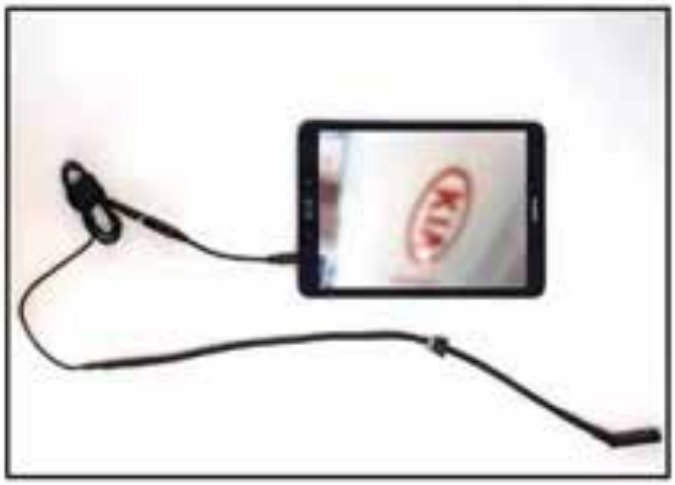


3. Select "Install".

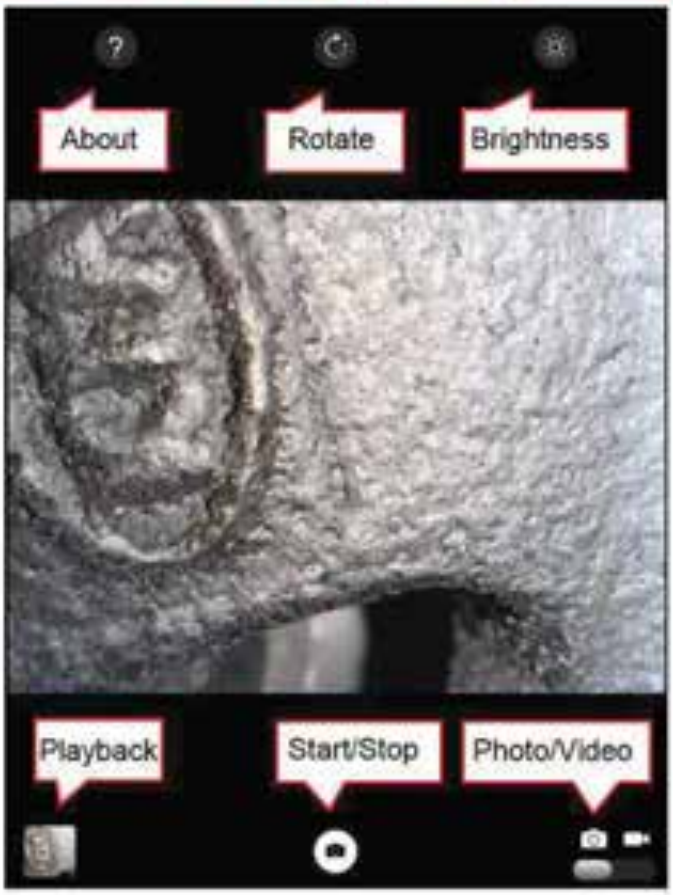


4. Connect the endoscope to the supplied OTG cable and then connect to KDS tablet. If requested to choose an app for the USB device, select "Endoscope". Select "Allow" to any pop-ups displayed.

   Note: the endoscope is specially designed for macro, up close viewing. Viewing at other distances will appear blurry. This is a normal condition.

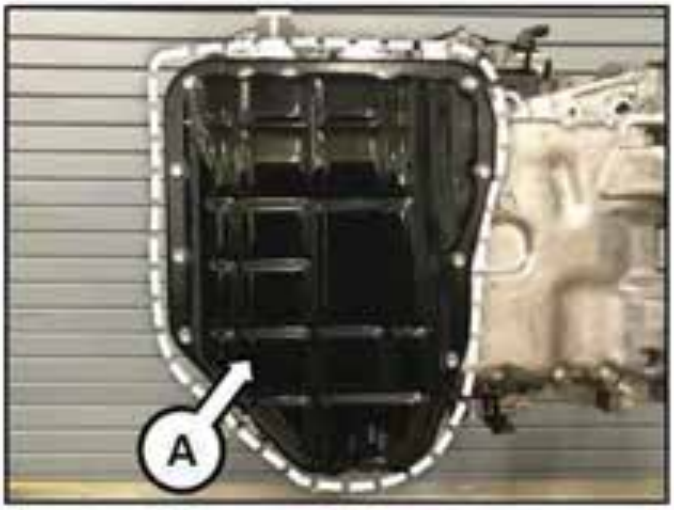


5. Included in this information is a list of button descriptions.



Inspection Procedure:

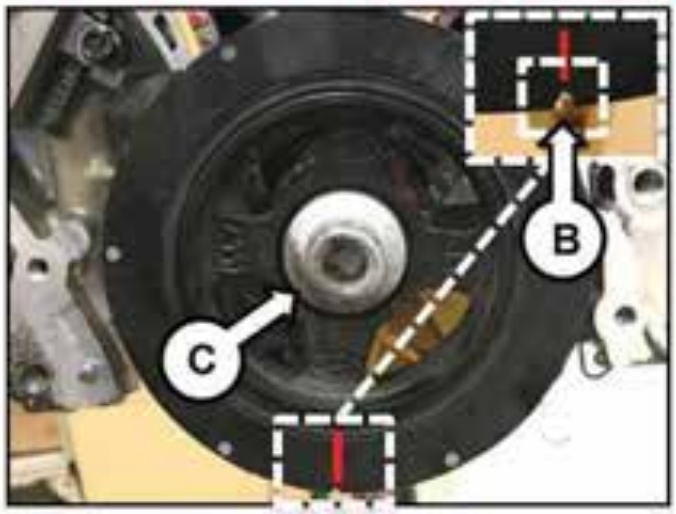
1. Remove the lower oil pan (A) by referring to the "Engine Mechanical System → Lubrication System → Oil Pan → Repair procedures" chapter in the applicable Shop Manual.



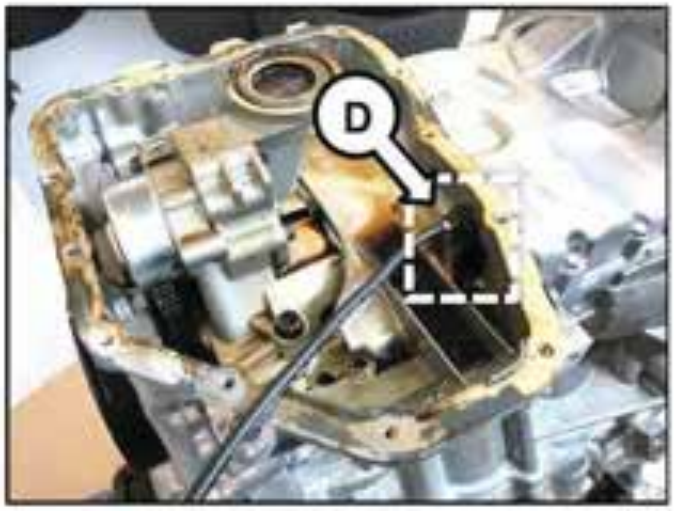
Engine assembly removed for demonstration purposes only.

SUBJECT: 3.3L LAMBDA ENGINE INSPECTION / REPLACEMENT (SC153)

2. Rotate the crankshaft and bring the timing mark (B, red mark) on the crank pulley (C) to the 6 o'clock position.



3. Insert the provided endoscope towards the rear of the engine through the oil return passage opening (D) of the upper oil pan.

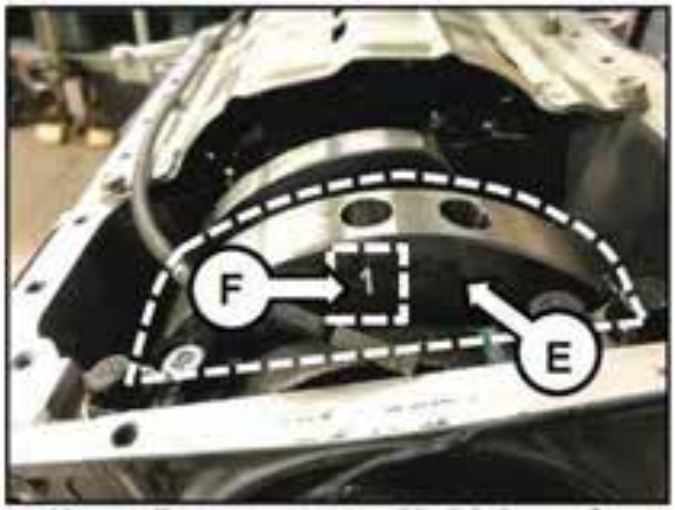


4. Locate the last crankshaft counter weight (E) (furthest away from the crank pulley). Using the endoscope, locate the lot number stamped on the back side (F) of the counter weight.

*** NOTICE**

If the lot number cannot be located, rotate the crankshaft 90° to the left or right from the timing mark (red mark) on the crankshaft pulley.



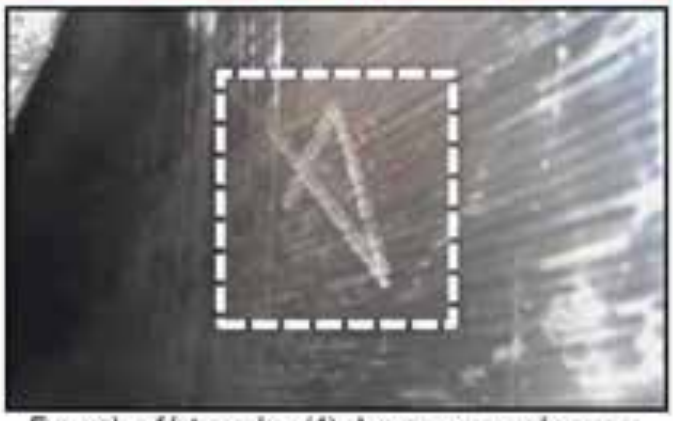


Upper oil pan was removed in this image for demonstration purposes only.
DO NOT remove the upper oil pan.

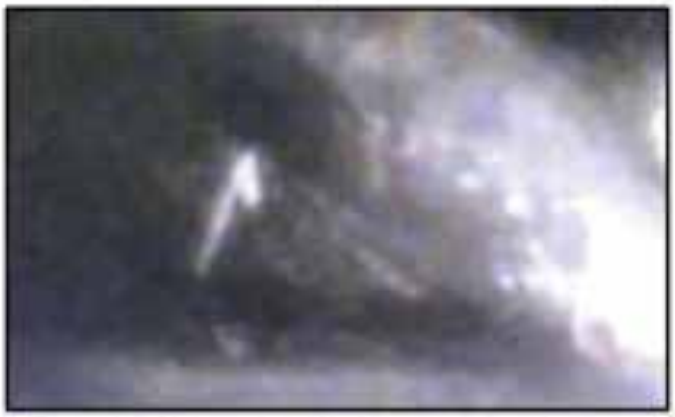
5. Take a photo of the crankshaft lot number with the endoscope and save the photo as it will be required for claim submission (attachment type "**XX: Other**" in WebDCS.)

   If the lot number is 1, replace the engine (long block) by referring to the "Engine Mechanical System → Engine and Transaxle Assembly → Engine and Transaxle Assembly → Repair procedures" chapter in the applicable Shop Manual on KGIS.

   If the lot number is 2, 3 or 4, replace the lower oil pan by referring to the "Engine Mechanical System → Lubrication System → Repair procedures" chapter in the applicable Shop Manual on KGIS and refill with new engine oil.



Example of lot number (4) shown on an endoscope.



Example of lot number (1) shown on an endoscope.



Example of lot number (3) shown on an endoscope.

★ NOTICE

Lot numbers may be partially stamped. See examples below:



Lot #1



Lot #2



Lot #3

6. Lot number 1: After replacement of the engine sub-assembly, verify proper operation of the vehicle with road test, and erase any stored DTCs (e.g., EPS, ESC, and TPMS) that may have been set by this procedure. Verify no leaks exist and ensure engine oil and coolant are at their proper level.

   DO NOT remove the starter bracket ear. Entire engine cores with the starter bracket ear intact are required for engine core return. See Parts Bulletin #20-201 0003 for more information.

   Lot number 2, 3, or 4: After replacement of the lower oil pan, start the engine and verify proper operation and no leaks. Ensure engine oil is at the proper level.

SUBJECT: 3.3L LAMBDA ENGINE INSPECTION / REPLACEMENT (SC153)

AFFECTED VEHICLE RANGE:

Model	Production Date Range
Sorento (UMa)	March 27, 2017 through March 30, 2017

REQUIRED TOOL:

Tool Name	Tool Number		Comments
Macro Endoscope	SC153 ENDO		Auto-shipped to Dealers

NOTE: Kia Consumer Assistance Center staff will be directly contacting affected customers to schedule service appointments due to the low volume of vehicles (62). They will also request shipment of the special service tool for shipment to dealers as appointments are scheduled due to limited tool supply. Therefore, not all dealers will be receiving this specialized tool.

REQUIRED PART:

Part Name	Part Number
Lower Oil Pan	21510 3C201
Sealant (for Lower Oil Pan)	UM016 CH123
Oil Filter Service Kit	26320 3CAA0
2WD Engine Sub Assembly	171R1 3CAAAQQK
AWD Engine Sub Assembly	173R1 3CAAAQQK

WARRANTY INFORMATION:

N Code: N99 C Code: C99

Claim Type	Causal P/N	Qty.	Repair Description	Labor Op Code	Op Time	Replacement P/N	Qty.
R	23110 3L100	0	(SC153) Crankshaft Inspection & Lower Oil Pan Replacement	171A48R0	1.3 M/H	21510 3C201	1
						26320 3CAA0	1
	23110 3L100	0	(SC153) Crankshaft Inspection & 2WD Engine Replacement	171A48R1	8.4 M/H	171R1 3CAAAQQK	1
						26320 3CAA0	1
	23110 3L100	0	(SC153) Crankshaft Inspection & AWD Engine Replacement	171A48R2	8.7 M/H	173R1 3CAAAQQK	1
						26320 3CAA0	1

NOTE: Use sublet code 'X1' with a maximum allowed amount of $13.92 for lower oil pan sealant (only applies to labor op code 171A48R0).
Use sublet code 'X2' to claim possible rental expense. 1 day maximum allowed for labor op code 171A48R0, and 5 day maximum allowed for labor op codes 171A48R1 & 171A48R2. Only if applicable, please include daily additional market surcharge in accordance with the schedule per Warranty Bulletin 2017-11 Section 2 found on KDealer.com → FIXED OPS → WARRANTY → Warranty Bulletins.
Use sublet code 'X3' with a maximum allowed amount of $19.50 for engine oil reimbursement (applies to all labor op codes). Dealer may claim max quantity of 1, for antifreeze/coolant (part#: UM040 CH012) loss (only applies to labor op codes 171A48R1 & 171A48R2).

Beginning April 1, 2018, entire engine cores with the starter bracket ear intact will be required to be received by KMA in order for dealers to receive their core deposit refund. If not received or if starter bracket ears are broken, the dealer core deposit will be forfeit.

★ NOTICE

VIN inquiry data for this repair is provided for tracking purposes only. Kia retailers should reference SC153 when accessing the WebDCS system.

PE19-004

KIA

TAB 40_S 15 e le P in i l oti e

October 30, 2017

Attention: All Dealer Principals

Kia Motors America, Inc., pursuant to the National Traffic and Motor Vehicle Safety Act, is conducting a Safety Recall Campaign to inspect, and if necessary, replace the engine sub-assembly on certain 2017 MY Kia Sorento vehicles equipped with a 3.3L Lambda engine and produced from March 27, 2017 through March 30, 2017. The engine's crankshaft may not have been properly heat treated during the manufacturing process. An improperly heat treated crankshaft will produce a cyclic knocking noise from the engine as well as result in the illumination of the vehicle's engine warning lamp. If the warnings are ignored and the vehicle is continued to be driven, the crankshaft may fail, and the vehicle may stall while in motion, increasing the risk of a crash. In addition, under certain conditions, a fire may occur. If engine replacement is not necessary, the lower oil pan will be replaced and additional sealant applied.

Your Service Manager was sent a copy of the owner notification letter and a Q&A guide for recall questions both of which describe the issue and information on how to access the list of affected vehicles.

Kia will mail notices to the affected vehicle owners beginning on **November 6, 2017.**

NHTSA ADVISORY: It is a violation of Federal law for a dealer to deliver a new motor vehicle covered by this notification under a sale or lease until the defect is remedied.

What Should You Do
Please make certain the appropriate personnel in your dealership are familiar with the details of this recall campaign to ensure proper responses to customer inquiries and requests to have the campaign performed on their vehicles.

LEGAL PRIVACY LIABILITY NOTICE: Pursuant to the terms of the Dealer Sales and Service Agreement and the Gramm-Leach-Bliley federal consumer privacy act, you are required to keep confidential any and all information and documents provided to you by Kia Motors America, Inc. or generated by you in the conduct of carrying out work under that Agreement regarding Kia vehicle purchasers and owners, including but not limited to warranty claim information. Kia dealers may use such owner information for the sole purpose of conducting and performing this safety recall campaign, and for no other purpose.

Your prompt attention in completing this recall campaign is appreciated. If you have any questions, please contact your Kia District Parts & Service Manager.

Sincerely,

Neem Van der Reest
Quality Analysis Manager

Enclosures

SC133

PE19-004

KIA

TAB 41_S 15 e le Se i e n e oti e

October 30, 2017

Attention: All Kia Parts & Service Managers

Kia Motors America, Inc., pursuant to the National Traffic and Motor Vehicle Safety Act, is conducting a Safety Recall Campaign to inspect, and if necessary, replace the engine sub-assembly on certain 2017 MY Kia Sorento vehicles equipped with a 3.3L Lambda engine and produced from March 27, 2017 through March 30, 2017. The engine's crankshaft may not have been properly heat treated during the manufacturing process. An improperly heat treated crankshaft will produce a cyclic knocking noise from the engine as well as result in the illumination of the vehicle's engine warning lamp. If the warnings are ignored and the vehicle is continued to be driven, the crankshaft may fail, and the vehicle may stall while in motion, increasing the risk of a crash. In addition, under certain conditions, a fire may occur. If engine replacement is not necessary, the lower oil pan will be replaced and additional sealant applied.

The Technical Service Bulletin (TSB) that provides Vehicle Repair Procedures, Affected VIN Production Range, and Warranty Claim Information will be posted on the Kia Global Information System (KGIS) at www.kiatechinfo.com on **October 30, 2017.**

- **NOTE:** Should a customer bring his/her vehicle to the dealer with a cyclic knocking noise from the engine, and/or the illumination of the engine warning lamp in the instrument panel, the dealer should inspect the crankshaft and, if necessary, replace the engine sub-assembly with a new one if the crankshaft's lot number is identified as one of the potentially affected parts. If engine replacement is not necessary, the lower oil pan will be replaced and additional sealant applied. ***If the inspection identifies that the engine sub-assembly must be replaced, the dealer should provide the customer with alternate transportation during the duration of the repairs. Dealers will be able to submit for reimbursement of alternate transportation expenses in the same manner as normal warranty claims in WebDCS.***

PARTS INFORMATION – Reference TSB and Parts Bulletin for details.

SPECIAL SERVICE TOOL – An additional borescope will be required to complete the inspection. Borescopes will be shipped to affected dealers on an as-needed basis as appointments are scheduled due to limited supply. The Kia Consumer Affairs team will be separately contacting all affected customers to attempt to schedule service appointments and request shipment of the borescope to dealers.

Enclosed you will find a copy of the owner notification letter and a Q&A Guide for recall questions, both of which describe the issue. Note that any vehicle owners who have already paid for repairs to their engine can submit a request for reimbursement online at kia.com (Contact Kia).

Also, please make certain the appropriate personnel in your dealership are familiar with the details of this recall to ensure proper responses to customer inquiries and requests to have the recall performed on their vehicles. This Safety Recall represents an opportunity for your service department to deliver an exceptional service experience (e.g. flexible service appointment process, car wash and vacuum and timely service).

NHTSA ADVISORY: It is a violation of Federal law for a dealer to deliver a new motor vehicle covered by this notification under a sale or lease until the defect is remedied.

LEGAL PRIVACY LIABILITY NOTICE: Pursuant to the terms of the Dealer Sales and Service Agreement and the Gramm-Leach-Bliley federal consumer privacy act, you are required to keep confidential any and all information and documents provided to you by Kia Motors America, Inc. or generated by you in the conduct of carrying out work under that Agreement regarding Kia vehicle purchasers and owners, including but not limited to warranty claim information. Kia dealers may use such owner information for the sole purpose of conducting and performing this safety recall campaign, and for no other purpose.

Your prompt attention in completing this recall is appreciated. If you have any questions, please contact your Kia District Parts and Service Manager.

Sincerely,



Neem Van der Reest
Quality Analysis Manager
Enclosures

PE19-004

KIA

TAB 42_S 15 A

SC153 – 2017 MY SORENTO 3.3L LAMBDA ENGINE CRANKSHAFT
SAFETY RECALL CAMPAIGN
Q & A

October 30, 2017

Q1. What type of campaign is Kia conducting?

A1. Kia is conducting a safety recall campaign to inspect and, if necessary, replace the engine sub-assembly in certain 2017 MY Kia Sorento vehicles equipped with a 3.3L Lambda engine. If engine replacement is not necessary, the lower oil pan will be replaced and additional sealant applied.

Q2. What vehicles are affected by the recall?

A2. Certain 2017 MY Kia Sorento vehicles equipped with a 3.3L Lambda engine and produced from March 27, 2017 through March 30, 2017.

Q3. How many customer vehicles are affected by this recall?

A3. Approximately 62 Kia Sorento vehicles.

Q4. What is the condition?

A4. The engine's crankshaft may not have been properly heat treated during the manufacturing process. An improperly heat treated crankshaft will produce a cyclic knocking noise from the engine as well as result in the illumination of the vehicle's engine warning lamp. If the warnings are ignored and the vehicle is continued to be driven, the crankshaft may fail, and the vehicle may stall while in motion, increasing the risk of a crash. In addition, under certain conditions, a fire may occur.

Q5. Can you describe the recall campaign and fix?

A5. Dealers should inspect the crankshaft and, if necessary, replace the engine sub-assembly with a new one if the crankshaft's lot number is identified as one of the potentially affected parts. If engine replacement is not necessary, the lower oil pan will be replaced and additional sealant applied.

Q6. How will owners of the affected vehicles be notified?

A6. Kia will send a letter notifying owners of the affected vehicles by first-class mail on November 6, 2017. Kia's Consumer Affairs team is also directly contacting customers to attempt to schedule service appointments for completion of the inspection and any necessary repairs.

Q7. What should vehicle owners do when they receive the notification?

A7. Owners are to contact their Kia dealer to arrange for the inspection of the crankshaft, and if necessary, the replacement of the engine sub-assembly with a new one.

Q8. How was the issue discovered?

A8. Through the regular monitoring of field information.

Q9. Have there been any deaths, injuries or accidents as a result of this condition?

A9. Yes. There one (1) first degree burn injury was reported.

Q10. Will this cost vehicle owners any money?

A10. No. The inspection, and if necessary, the replacement of the engine sub-assembly or oil pan, will be at no cost to the customer.

Q11. What about customers who may have already paid to have the engine sub-assembly replaced?

A11. If you have incurred expense to remedy this issue prior to the date of this notice, you may have the opportunity to obtain reimbursement for that expense. You may submit your receipts online to Kia via the Owners section (Contact Kia) of www.kia.com OR mail your documentation directly to Kia for review and consideration at the following address:

Consumer Assistance Center
Kia Motors America, Inc.
P.O. Box 52410
Irvine, CA 92619-2410
1-800-333-4542

Q12. How long will the repair take?

A12. The actual time required to perform the inspection procedure will take approximately 1 hour, however your vehicle may be needed longer depending upon the type of repairs necessary; therefore, we recommend scheduling a service appointment to minimize inconvenience. Additional time will be required if it is necessary to perform a repair procedure on your vehicle. Please contact your dealer for an exact estimate of how long they may need your vehicle.

Q13. Are there any restrictions on an owner's eligibility?

A13. No.

Q15. If a customer has an immediate question, where can they get further information?

A15. The customer can contact their local Kia dealership or call Kia's Consumer Assistance Center at 1-800-333-4KIA (4542), Monday through Friday, 5 AM to 6 PM Pacific Standard Time, or via the internet @ www.kia.com (Owner's Section).

PE19-004

KIA

TAB 4 _TSB_S 170

	GROUP	MODEL
KIA	**Safety Recall Campaign**	**2018MY Stinger (CK)**
	NUMBER	DATE
	SC170	**December 2018**

SAFETY RECALL CAMPAIGN

SUBJECT: FRONT WIRING HARNESS INSPECTION/REPLACEMENT AND GROMMET INSTALLATION (SC170)

This bulletin provides the procedure to inspect the Front Wiring Harness for damage to the wiring insulation on some 2018MY Kia Stinger vehicles produced from July 20, 2017 through June 8, 2018.

- If no damage is found, dealers are to install a grommet to cover the hole in the left fender apron panel.
- If wiring damage is found, dealers are to replace the front wiring harness and install a grommet to cover the hole in the left fender apron panel.

The Front Wiring Harness ("harness") is located in the engine and passenger compartment of the vehicle. The harness can come in contact with a burr on the edge of a hole in the sheet metal of the left fender apron body panel. Such contact can damage the insulation of one or more wires and cause an electrical short circuit, increasing the risk of a fire.

Before conducting the procedure, verify the vehicle is included in the list of affected VINs.



*** NOTICE**

There is no charge to the vehicle owner for this repair. Under applicable law, you may not sell or otherwise deliver any affected vehicle until it has been repaired pursuant to the procedures set forth in this bulletin.

*** NOTICE**

To assure complete customer satisfaction, always remember to refer to WebDCS Warranty Coverage (validation) Inquiry Screen (Service → Warranty Coverage → Warranty Coverage Inquiry) for a list of any additional campaigns that may need to be performed on the vehicle before returning it to the customer.

File Under: <Safety Recall Campaign>

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

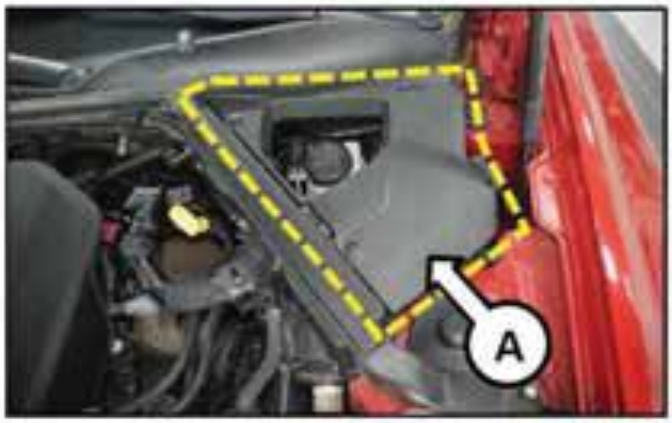
SUBJECT: FRONT WIRING HARNESS INSPECTION/REPLACEMENT AND GROMMET INSTALLATION (SC170)

Inspection Procedure:

1. Record the customer's radio presets and then disconnect the negative "-" battery terminal.



2. Remove the engine side cover (A).



3. Disconnect the two (2) ECU connectors (B).



4. Detach the hood seal (C).



5. Remove the two (2) harness protector retaining nuts (D).

Tightening torque for nuts (D):
43.4 - 69.4 lb.in (4.9 - 7.8 Nm, 0.5 - 0.8 kgf.m)

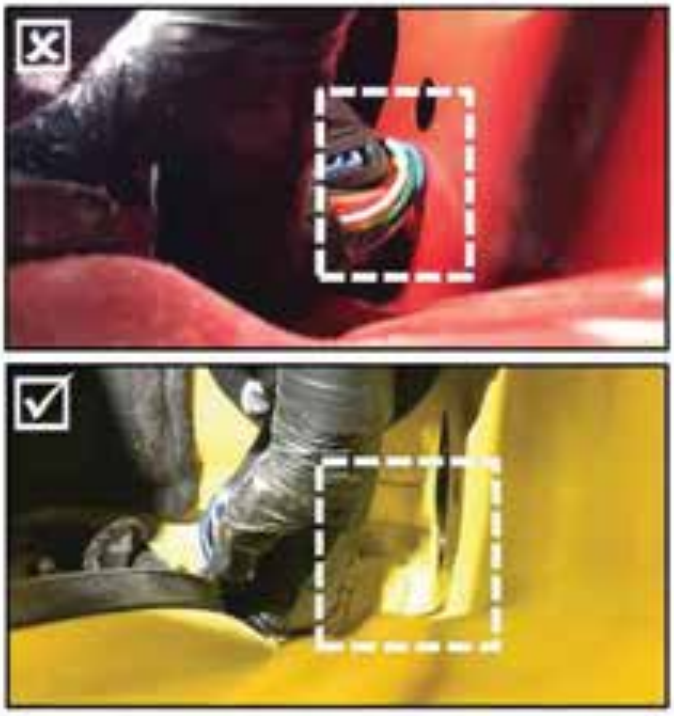


6. Remove the one (1) ECU bracket mounting bolt and two (2) bracket mounting nuts and then remove the ECU and bracket assembly (E).

Tightening torque (bolt and nuts):
7.2 - 8.7 lb.ft (9.8 - 11.8 Nm, 1.0 - 1.2 kgf.m)

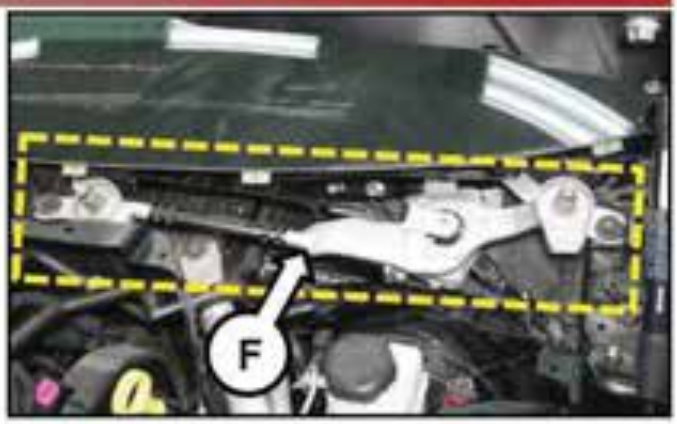


7. Visually inspect the harness for interference.
   - If the harness is touching the left fender apron panel (☒), proceed to the next step.
   - If the harness is not touching the panel (☑), proceed to step 13 on page 5.



SUBJECT: FRONT WIRING HARNESS INSPECTION/REPLACEMENT AND GROMMET INSTALLATION (SC170)

8. Remove the windshield wiper assembly (F) by referring to steps 2 through 5 of the "Body Electrical System → Windshield Wiper/Washer → Front Wiper Motor → Repair procedures" chapter in the applicable Shop Manual.



9. Remove the two (2) wire harness protector retaining nuts (G) located by the brake booster.

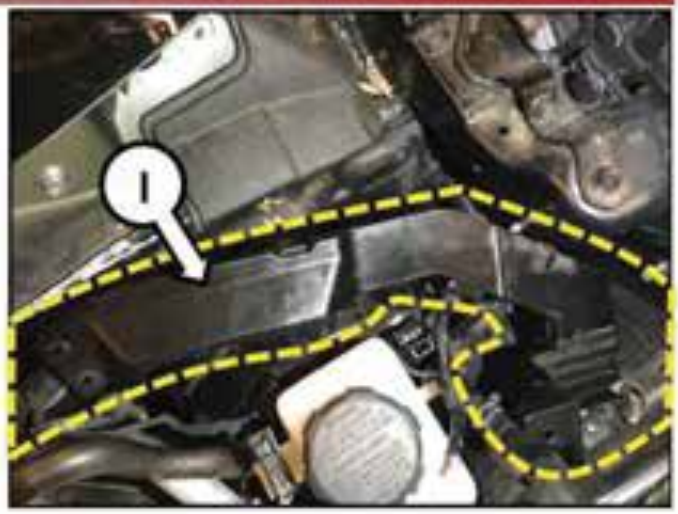




10. Disconnect the brake master cylinder connector (H).



11. Carefully move the harness and protector (I) away from the firewall enough to allow access to the lower area of the harness.



12. Reach behind the hood and into the well area to slightly pull up the harness. Thoroughly inspect the harness for any damage.
    - If there is damage to the harness, open a Techline case online and **do not proceed** with claim submission until wire harness replacement approval or denial is determined.
    - If there is no damage to the harness, proceed to the next step.



13. Install a rubber grommet at the opening (K) shown.



14. Reinstall all removed components in the reverse order of removal.

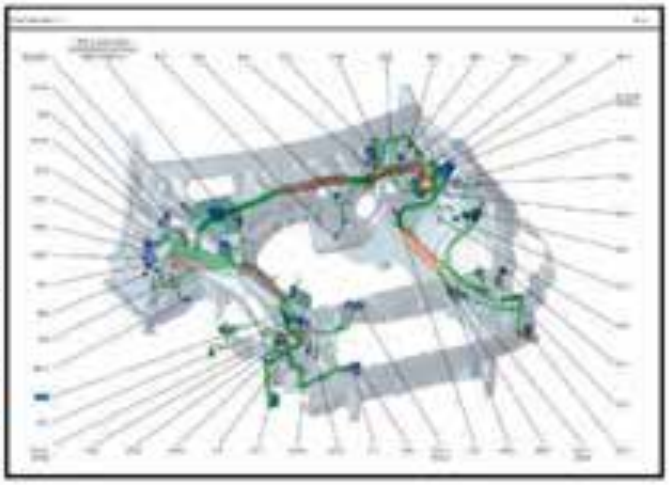
15. Verify proper operation of the vehicle and restore the customer's radio presets.

SUBJECT: FRONT WIRING HARNESS INSPECTION/REPLACEMENT AND GROMMET INSTALLATION (SC170)

AFFECTED VEHICLE RANGE:

Model	Production Date Range
Stinger (CK)	July 20, 2017 through June 8, 2018

REQUIRED PART:

Part Name	Part Number	Figure
Rubber Grommet	84253 B1000QQK	
Front Wiring Harness	91215 J5551QQK	
	91215 J5561QQK	
	91215 J5671QQK	
	91215 J5681QQK	
	91215 J5731QQK	
	91215 J5741QQK	
	91215 J5751QQK	
	91215 J5761QQK	
	91219 J5061QQK	
	91219 J5071QQK	
	91219 J5101QQK	
	91219 J5111QQK	
	91219 J5121QQK	
	91219 J5131QQK	
	91219 J5141QQK	
	91219 J5151QQK	
	91219 J5161QQK	
	91219 J5171QQK	
	912E0 J5020QQK	

SUBJECT: FRONT WIRING HARNESS INSPECTION/REPLACEMENT AND GROMMET INSTALLATION (SC170)

WARRANTY INFORMATION:
N Code: N99 C Code: C99

Claim Type	Causal P/N	Qty.	Repair Description	Labor Op Code	Op Time	Replacement P/N	Qty.
R	64501 J5000	0	(SC170) Front Wiring Inspection & Grommet Installation	181144R0	0.3 M/H	84253 B1000QQK	1
R	64501 J5000	0	(SC170) Wiper Assembly R&R, Front Wiring Inspection & Grommet Installation	181144R1	0.6 M/H	84253 B1000QQK	1
R	64501 J5000	0	(SC170) Wiper Assembly R&R, Front Wiring Inspection, & Wire Harness R&R **(Techline Approval Required)**	TBD	TBD	84253 B1000QQK	1
						91215 J5551QQK	1
						91215 J5561QQK	
						91215 J5671QQK	
						91215 J5681QQK	
						91215 J5731QQK	
						91215 J5741QQK	
						91215 J5751QQK	
						91215 J5761QQK	
						91219 J5061QQK	
						91219 J5071QQK	
						91219 J5101QQK	
						91219 J5111QQK	
						91219 J5121QQK	
						91219 J5131QQK	
						91219 J5141QQK	
						91219 J5151QQK	
						91219 J5161QQK	
						91219 J5171QQK	
						912E0 J5020QQK	

Notes:
If damage to the wire harness is found, please do not proceed with claim submission until the wire harness R&R approval or denial is determined by Techline. This is to avoid prematurely submitting for the rubber grommet installation only and losing the ability to claim for the wire harness R&R.

If necessary, enter sublet code 'X2' for rental expense reimbursement.

★ NOTICE

VIN inquiry data for this repair is provided for tracking purposes only. Kia retailers should reference SC170 when accessing the WebDCS system.

PE19-004

KIA

TAB 44_TSB_S 170_R1

	GROUP	MODEL
KIA	**Safety Recall Campaign**	**2018MY Stinger (CK)**
	NUMBER	DATE
	SC170 (Rev 1, 02/04/2019)	**December 2018**

SAFETY RECALL CAMPAIGN

SUBJECT: FRONT WIRING HARNESS INSPECTION/REPLACEMENT AND GROMMET INSTALLATION (SC170)

*** NOTICE**

This bulletin has been revised to include additional information. New/revised sections of this bulletin are indicated by a black bar in the margin area.

This bulletin provides the procedure to inspect the Front Wiring Harness for damage to the wiring insulation on some 2018MY Kia Stinger vehicles produced from July 20, 2017 through June 8, 2018.

- If no damage is found, dealers are to install a grommet to cover the hole in the left fender apron panel.
- If wiring damage is found, dealers are to replace the front wiring harness and install a grommet to cover the hole in the left fender apron panel.

The Front Wiring Harness ("harness") is located in the engine and passenger compartment of the vehicle. The harness can come in contact with a burr on the edge of a hole in the sheet metal of the left fender apron body panel. Such contact can damage the insulation of one or more wires and cause an electrical short circuit, increasing the risk of a fire.

Before conducting the procedure, verify the vehicle is included in the list of affected VINs.

*** NOTICE**

There is no charge to the vehicle owner for this repair. Under applicable law, you may not sell or otherwise deliver any affected vehicle until it has been repaired pursuant to the procedures set forth in this bulletin.

*** NOTICE**

To assure complete customer satisfaction, always remember to refer to WebDCS Warranty Coverage (validation) Inquiry Screen (Service → Warranty Coverage → Warranty Coverage Inquiry) for a list of any additional campaigns that may need to be performed on the vehicle before returning it to the customer.

File Under: <Safety Recall Campaign>

Circulate To: ☒ **General Manager** ☒ **Service Manager** ☒ **Parts Manager**
☒ **Service Advisors** ☒ **Technicians** ☒ **Body Shop Manager** ☒ **Fleet Repair**

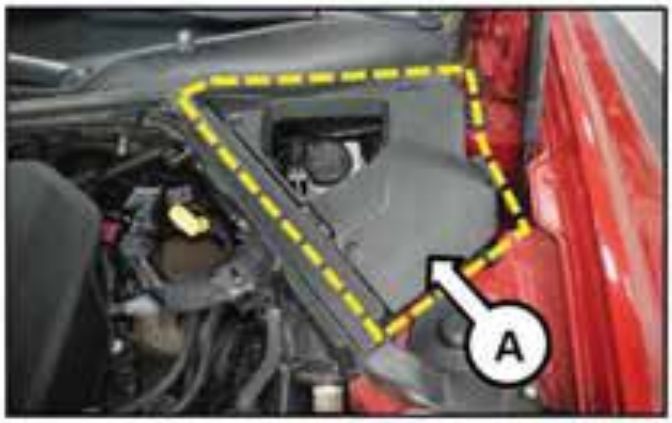
SUBJECT: FRONT WIRING HARNESS INSPECTION/REPLACEMENT AND GROMMET INSTALLATION (SC170)

Inspection Procedure:

1. Record the customer's radio presets and then disconnect the negative "-" battery terminal.



2. Remove the engine side cover (A).



3. Disconnect the two (2) ECU connectors (B).



4. Detach the hood seal (C).



5. Remove the two (2) harness protector retaining nuts (D).

Tightening torque for nuts (D):
43.4 - 69.4 lb.in (4.9 - 7.8 Nm, 0.5 - 0.8 kgf.m)



6. Remove the one (1) ECU bracket mounting bolt and two (2) bracket mounting nuts and then remove the ECU and bracket assembly (E).

Tightening torque (bolt and nuts):
7.2 - 8.7 lb.ft (9.8 - 11.8 Nm, 1.0 - 1.2 kgf.m)

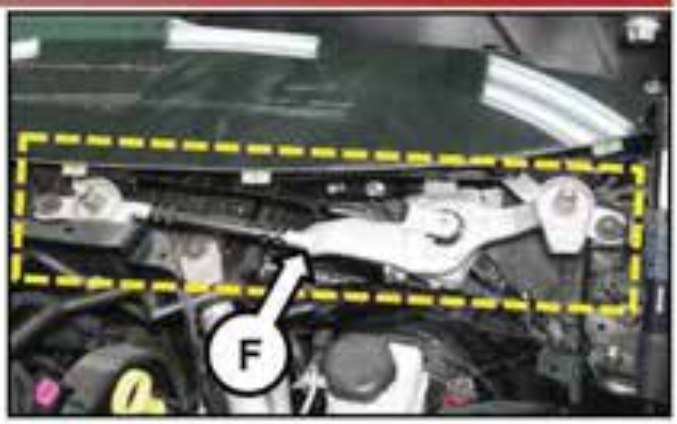


7. Visually inspect the harness for interference.
   - If the harness is touching the left fender apron panel (☒), proceed to the next step.
   - If the harness is not touching the panel (☑), proceed to step 13 on page 5.





8. Remove the windshield wiper assembly (F) by referring to steps 2 through 5 of the "Body Electrical System → Windshield Wiper/Washer → Front Wiper Motor → Repair procedures" chapter in the applicable Shop Manual.



9. Remove the two (2) wire harness protector retaining nuts (G) located by the brake booster.

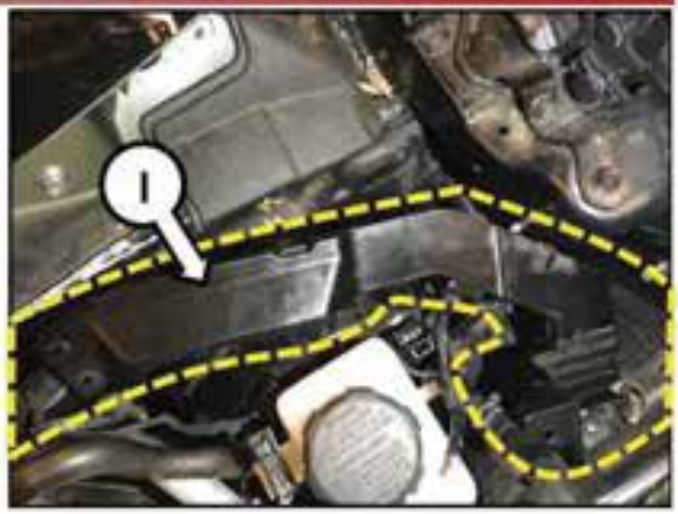




10. Disconnect the brake master cylinder connector (H).



11. Carefully move the harness and protector (I) away from the firewall enough to allow access to the lower area of the harness.



12. Reach behind the hood and into the well area to slightly pull up the harness. Thoroughly inspect the harness for any damage.
    - If there is damage to the harness, open a Techline case online and **do not proceed** with claim submission until wire harness replacement approval or denial is determined. See page 6 for the Front Wiring Harness Replacement procedure.
    - If there is no damage to the harness, proceed to the next step.



13. Install a rubber grommet at the opening (K) shown.



14. Reinstall all removed components in the reverse order of removal.

15. Verify proper operation of the vehicle and restore the customer's radio presets.

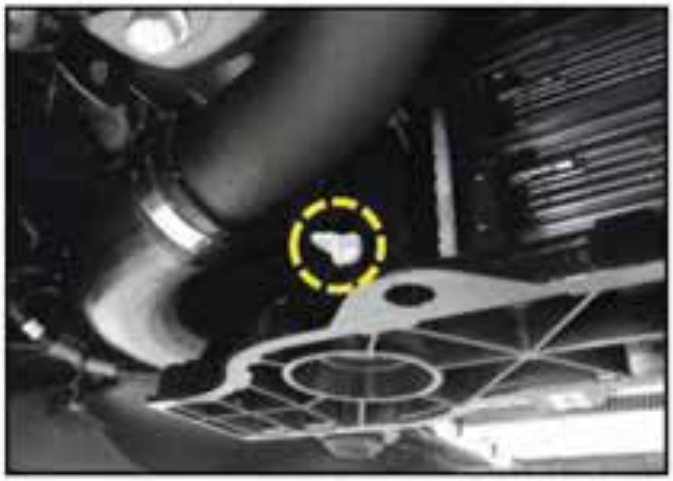
SUBJECT: FRONT WIRING HARNESS INSPECTION/REPLACEMENT AND GROMMET INSTALLATION (SC170)

Front Wiring Harness Replacement Procedure:

*** IMPORTANT**

Refer to the "Body Electrical System → General Information" chapter in the applicable Shop Manual on KGIS for important information on handling connectors, wires, and harnesses.

1. With the vehicle on a lift, remove the engine under cover and begin coolant drain.

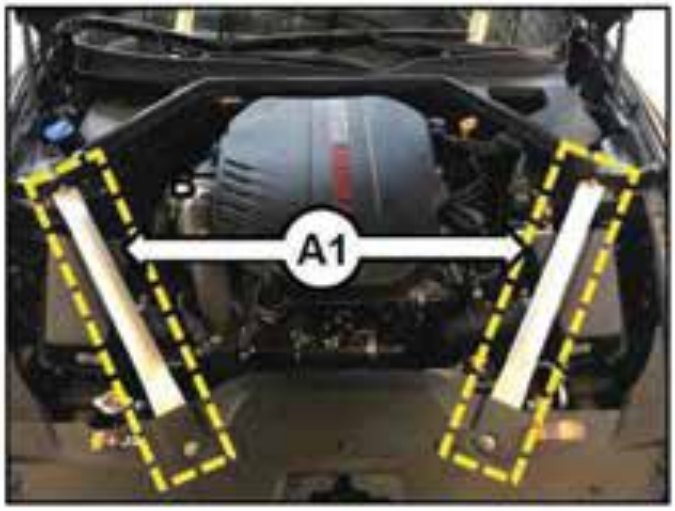


2. While draining the coolant with a small catch container underneath the vehicle, remove the two (2) strut bars (A1).

*** NOTICE**

Be sure to close the drain plug when coolant drain is complete.

Tightening torque (strut bars):
34 – 45 lb.ft (46.4 – 60.8 N.m, 4.7 – 6.2 kgf.m)



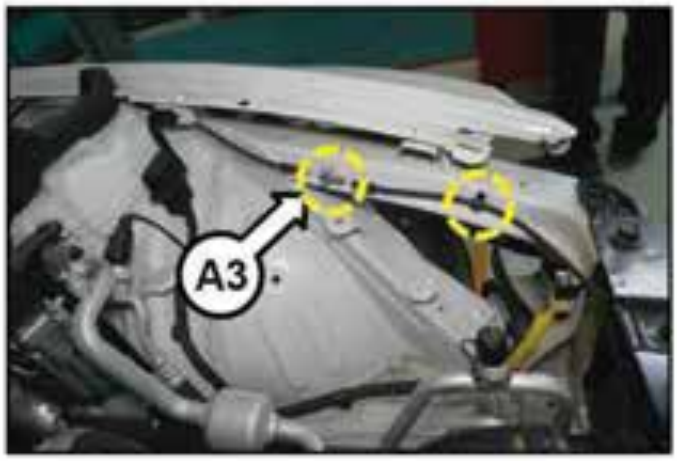
3. Recover the AC refrigerant by referring to the "Heating, Ventilation, and Air Conditioning → Air Conditioning System → Repair procedures" chapter in the applicable Shop Manual on KGIS.



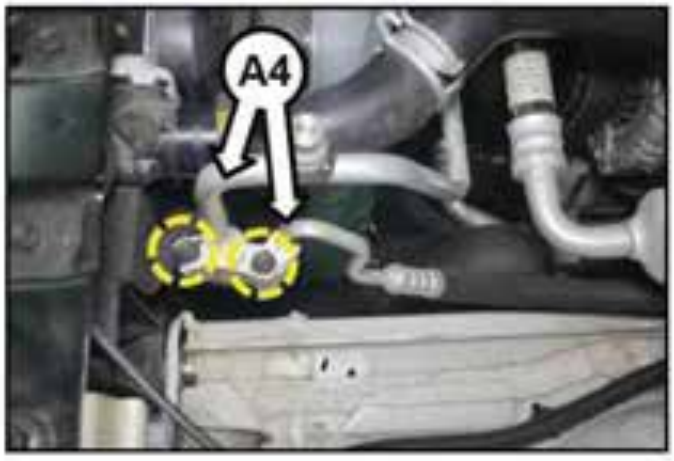
4. Remove the headlamps (A2) by referring to the "Body Electrical System → Lighting System → Headlamps → Repair procedures" chapter in the applicable Shop Manual on KGIS.



5. Separate the hood latch cable at the cable joint (A3) and detach the cable retaining clip.



6. Remove the two (2) air conditioning pipe (high pressure and a/c pressure transducer) retaining nuts and detach the two pipes (A4).



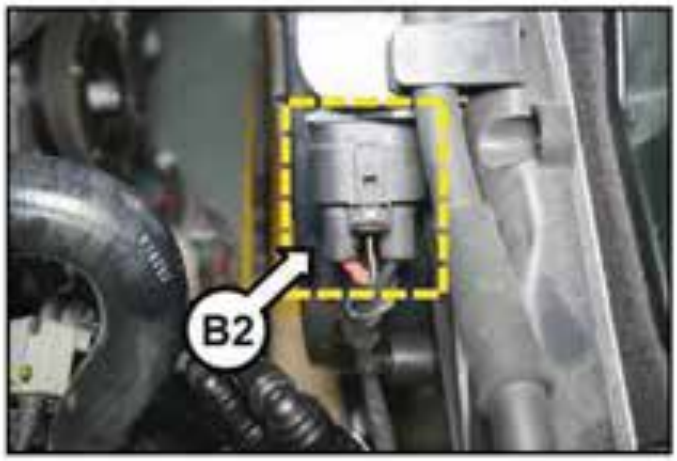
7. Detach the upper and lower radiator hoses from the radiator.



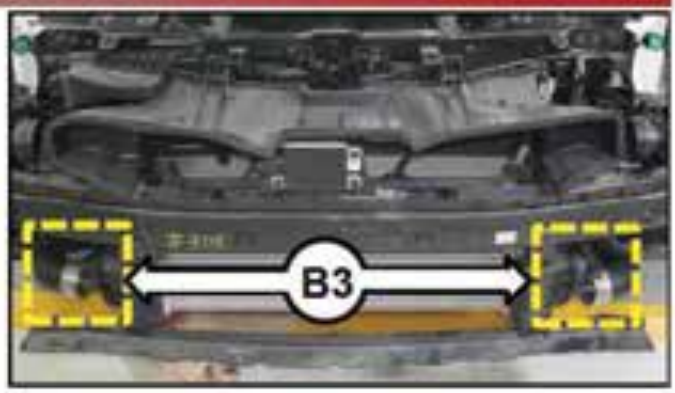
8. Detach the transmission oil cooler inlet and outlet pipes (B1) from the transmission cooler.



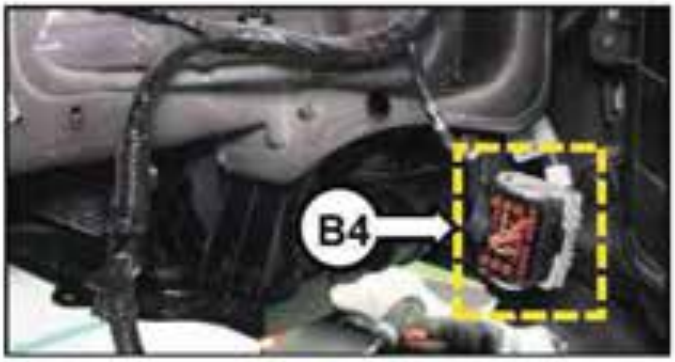
9. Disconnect the cooling fan connector (B2).



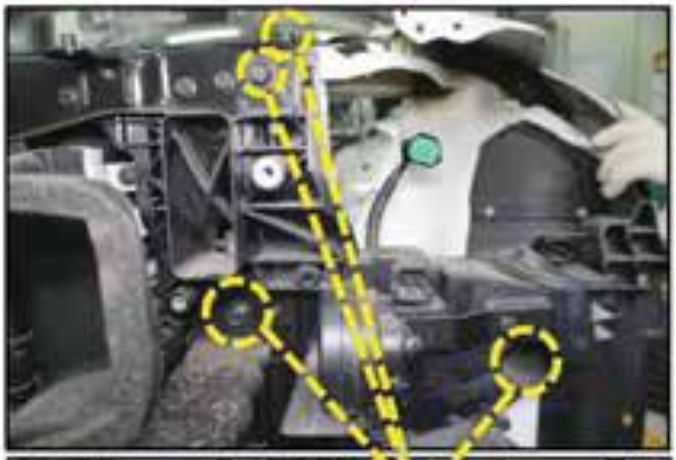
10. Detach the intercooler inlet and outlet hoses (B3).

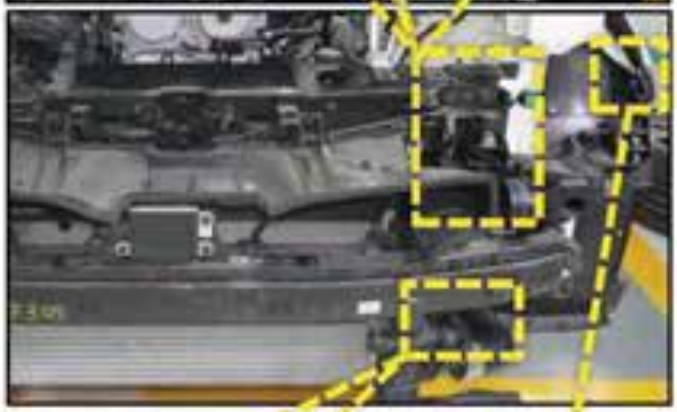


11. Disconnect the front end module connector (B4).



12. Remove the seven (7) front end module carrier retaining bolts on <u>each side</u> of the carrier and remove the front end module carrier.









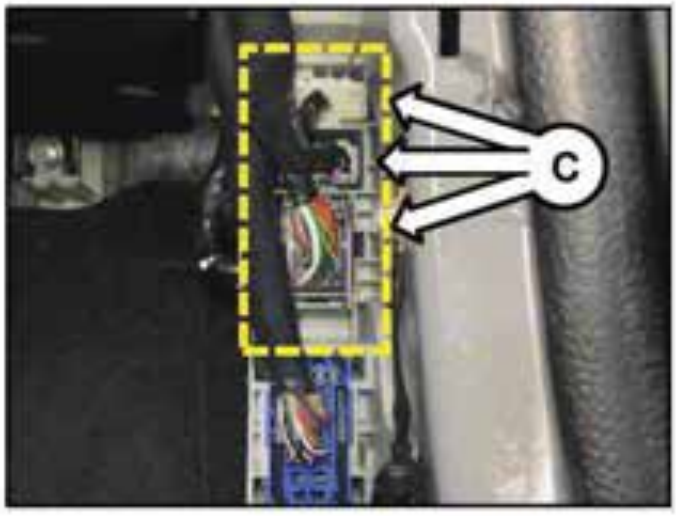
13. Remove the engine and transmission assembly (A) by referring to the "Engine Mechanical System → Engine and Transmission Assembly → Engine and Transmission Assembly → Repair procedures" chapter in the applicable Shop Manual on KGIS.



14. Remove the glove box assembly (B) by referring to the "Body (Interior and Exterior) → Crash Pad → Glove Box Housing → Repair procedures" chapter in the Shop Manual on KGIS.

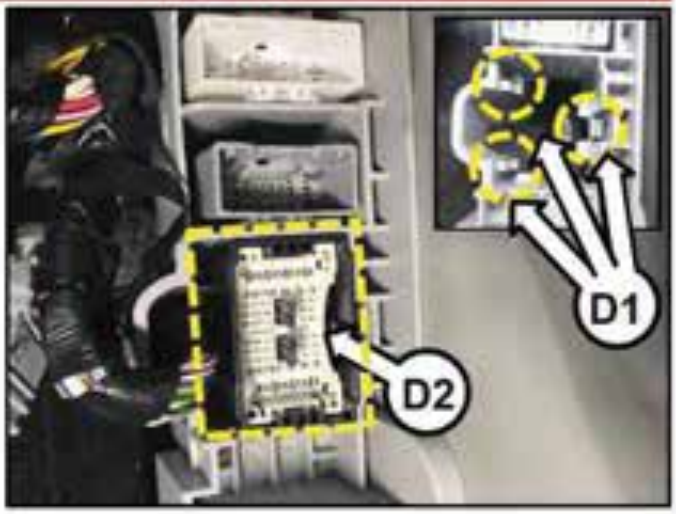


15. Disconnect the three upper connectors (C) at the floor harness joint housing located at the front passenger footwell.



SUBJECT: FRONT WIRING HARNESS INSPECTION/REPLACEMENT AND GROMMET INSTALLATION (SC170)

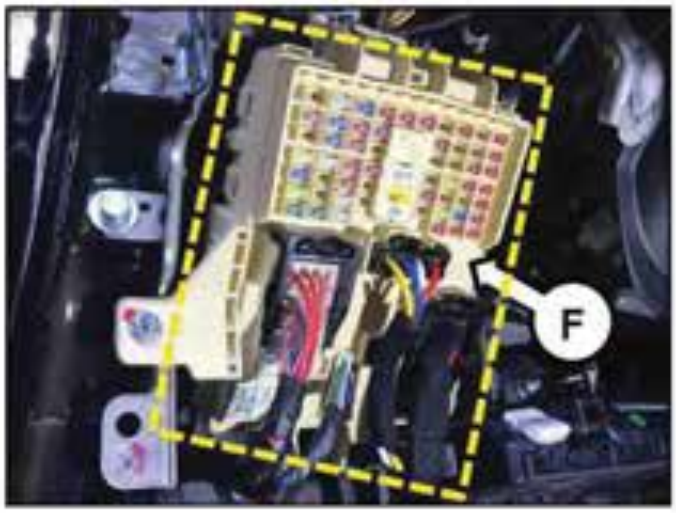
16. Carefully release the three (3) locking tabs (D1) and remove the connector (D2).



17. Disconnect the two (2) connectors (E) at the Electric Oil Pump Inverter, located above the front passenger foot well floor harness joint housing.



18. Remove the Integrated Central Control Unit (ICU) (F) by referring to the "Body Electrical System → Fuses And Relays → Relay Box (Passenger Compartment) → Repair procedures" chapter in the applicable Shop Manual on KGIS.

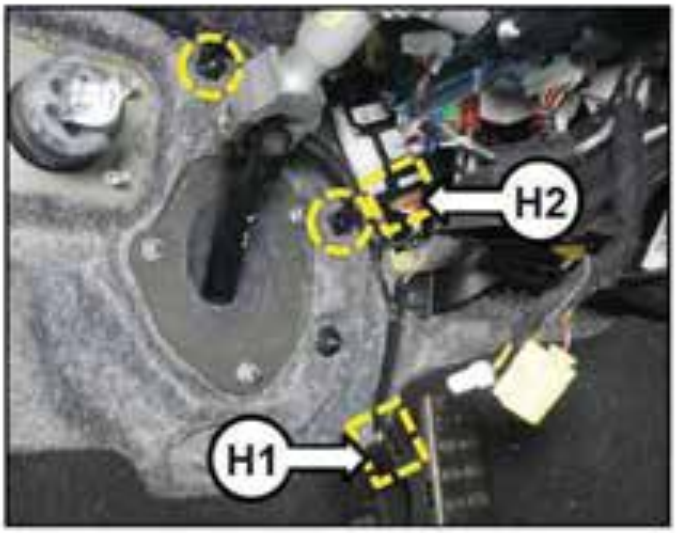


19. Refer to the "Brake System → Brake System → Brake Pedal → Repair procedures" chapter in the applicable Shop Manual on KGIS to partially remove the brake pedal assembly (G) enough to remove the wiring harness past the brake pedal assembly.

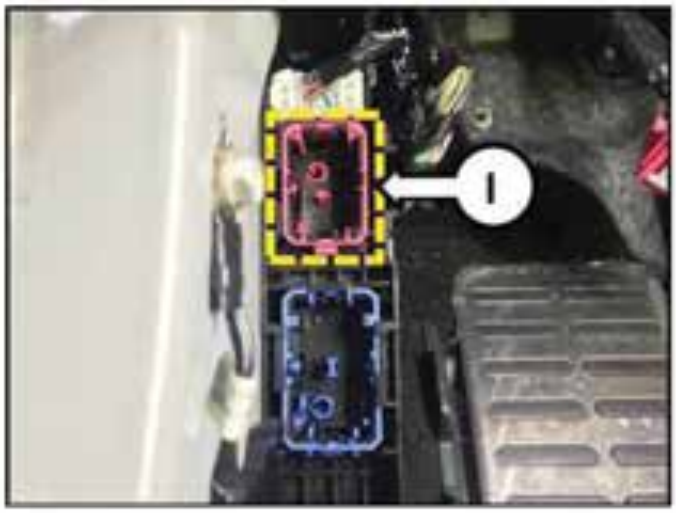


20. Disconnect the Accelerator Pedal Position Sensor (H1) and if equipped, disconnect the AWD ECU connector (H2). Detach the harness retaining clips.

Note: The brake pedal assembly was completely removed for demonstration of wiring harness routing only. Complete removal of the brake pedal assembly is not necessary.



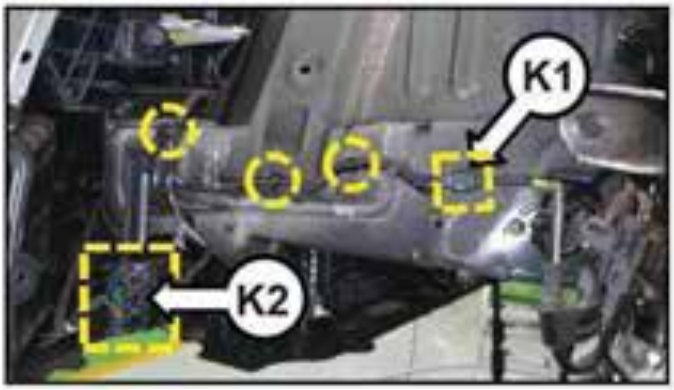
21. Remove the center connector (I) from the floor harness joint housing located at the driver footwell.



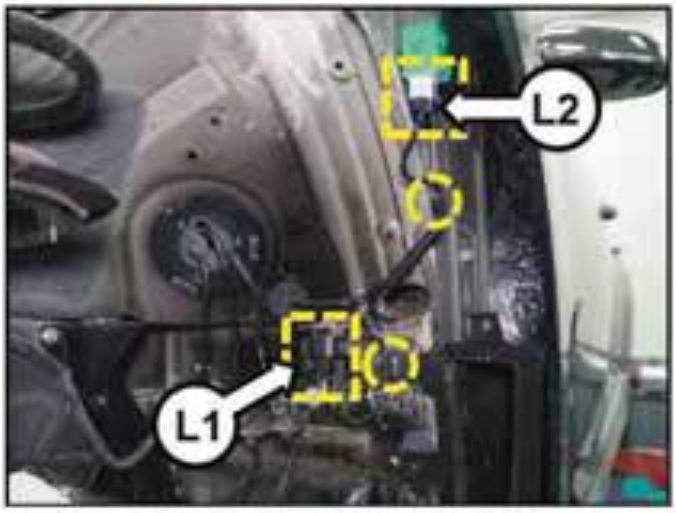
22. Remove both front fender liners (wheel guards) (J).



23. Disconnect the left front wheel speed sensor (K1) and extension harness (K2) and detach the wiring harness retaining clips.



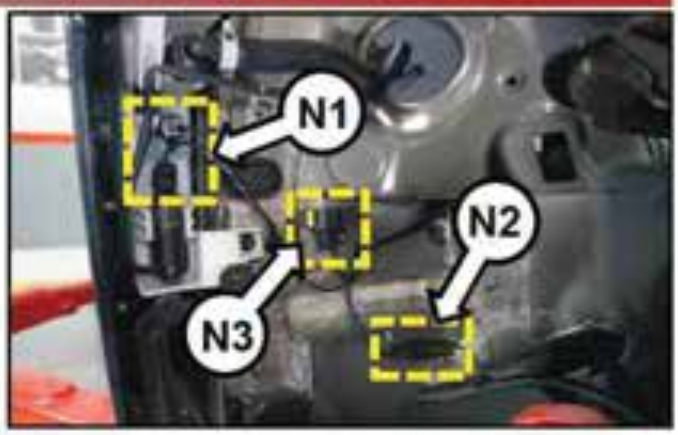
24. Disconnect the external buzzer connector (L1) and, if equipped, disconnect the left front electronic control suspension (ECS) G-sensor connector (L2). Detach the wiring harness retaining clips.



25. Disconnect the right front wheel speed sensor (M1) and ground (M2). Detach the wiring harness retaining clips.



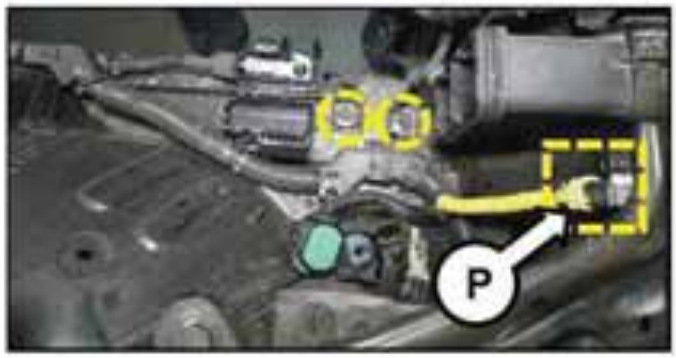
26. Disconnect the washer motor and level sensor connectors (N1), battery harness connector (N2), and, if equipped, the right front ECS connector (N3). Detach the wiring harness retaining clips.



27. Remove the ground retaining nut and disconnect the ground (O).



28. Disconnect the front passenger impact sensor connector (P). Detach the wiring harness retaining clips.



29. Remove the two (2) ground retaining bolts and disconnect the two (2) ground cables (Q).

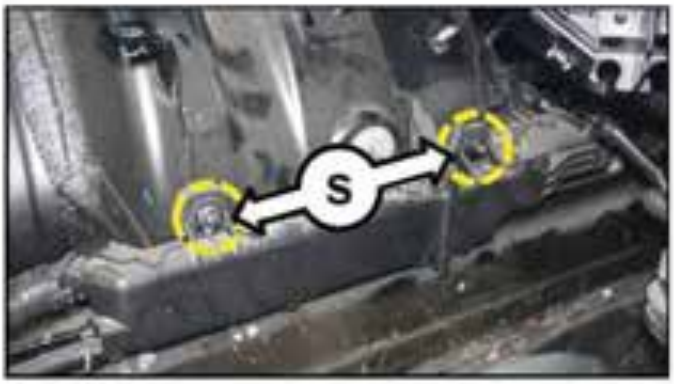


SUBJECT: FRONT WIRING HARNESS INSPECTION/REPLACEMENT AND GROMMET INSTALLATION (SC170)

30. If not already performed, disconnect the battery cable (R1) and then remove the two (2) battery junction block retaining nuts (R2).



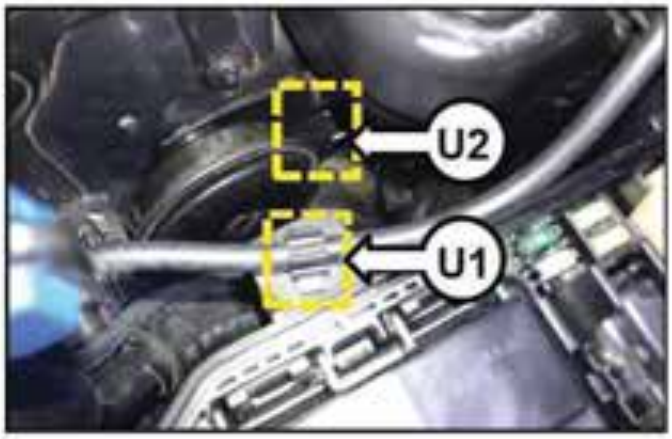
31. Remove the two (2) wiring harness protector retaining nuts (S).



32. Remove the three (3) junction box retaining bolts for removal of the junction box (T).



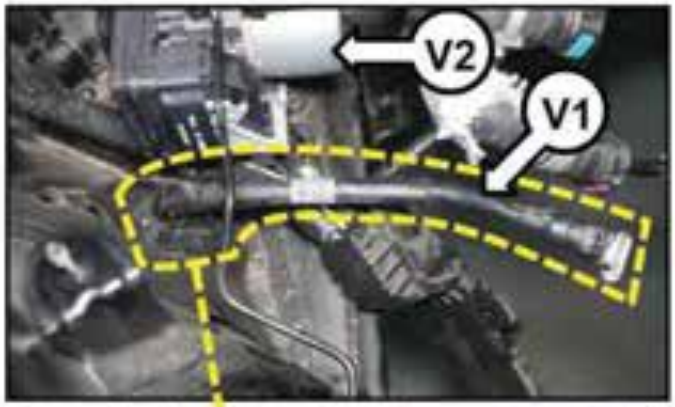
33. Detach the washer nozzle clip (U1) from the junction box (T) and then disconnect the horn connector (U2).



34. Remove the two (2) wiring harness protector retaining nuts.

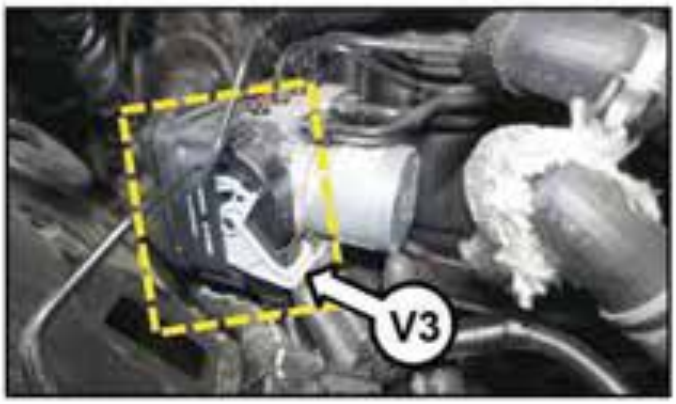


35. Remove the ground cable and grommet (V1) located next to the Electronic Stability Control (ESC) module (V2).





36. Disconnect the ESC connector (V3).



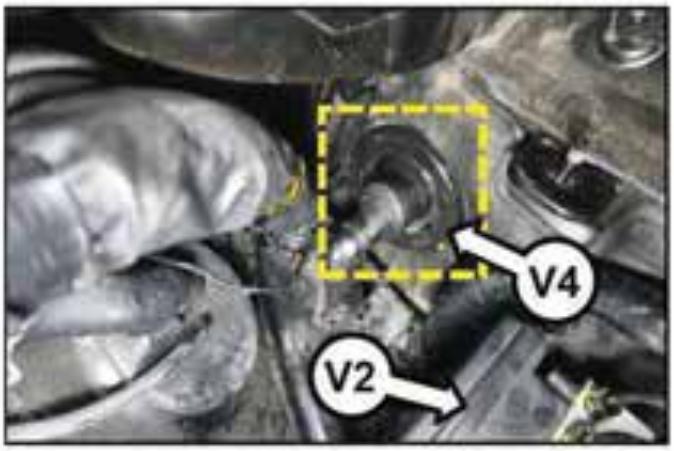
37. Remove the two (2) ESC module retaining bolts.



38. Detach the two (2) wiring harness retaining clips.



39. Detach the grommet (V4) from the firewall, located behind the ESC module (V2) and pull out connector (D2) removed in step 4 of this procedure.



40. Remove the wiring harness from underneath the ESC module (V2).



41. Remove the protected section of the wiring harness between the ESC module and hardline.



42. Complete the passenger side of the front wiring harness removal.



43. Detach the two (2) wiring harness protector retaining clips above the heater exchange valve.



SUBJECT: FRONT WIRING HARNESS INSPECTION/REPLACEMENT AND GROMMET INSTALLATION (SC170)

45. Ensure the wiring harness retaining clips are detached from above the brake booster and the wiper motor and master cylinder connectors have been removed.

    Trace the wiring harness and detach all wiring harness retaining clips.









46. Detach the Multipurpose Check connector (W1) from the vehicle and disconnect the A/C Pressure Transducer connector (W2). Detach the wiring harness retaining clip.



47. Disconnect the left front impact sensor connector (X).



48. Remove the two (2) ground retaining nuts and disconnect the two (2) ground cables (Y).

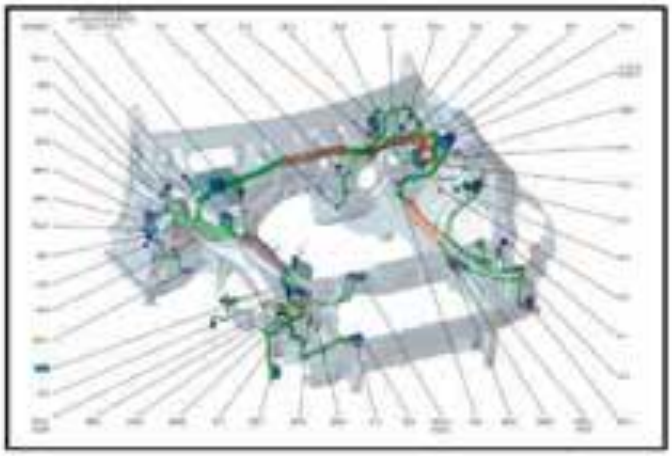


49. Remove the grommet (Z) located by the left fender apron and completely remove the rest of the front wiring harness between the brake booster and lines.



50. Install the new front wiring harness, ensuring proper routing of harness and secured connections at all connectors.

    Refer to the "Harness Layout → Front Harness → Schematic Diagrams" chapter in the applicable ETM Manual on KGIS for details.



51. Verify proper operation of the vehicle and erase any stored DTCs (e.g., EPS, ESC, and TPMS) that may have been set by this procedure. Verify no leaks exist and ensure engine oil and coolant are at their proper level. If any DTCs are still active, follow any related diagnosis and repair as needed.

SUBJECT: FRONT WIRING HARNESS INSPECTION/REPLACEMENT AND GROMMET INSTALLATION (SC170)

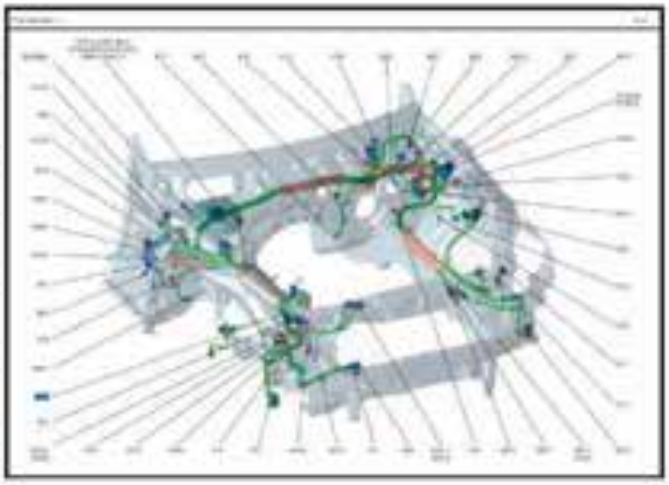
AFFECTED VEHICLE RANGE:

Model	Production Date Range
Stinger (CK)	July 20, 2017 through June 8, 2018

REQUIRED PART:

Part Name	Part Number	Figure
Rubber Grommet	84253 B1000QQK	

RELATED PART:

Part Name	Part Number	Figure
2.0T Front Wiring Harness	91215 J5551QQK 91215 J5561QQK 91215 J5671QQK 91215 J5681QQK 91215 J5731QQK 91215 J5741QQK 91215 J5751QQK 91215 J5761QQK	
3.3TT Front Wiring Harness	91219 J5061QQK 91219 J5071QQK 91219 J5101QQK 91219 J5111QQK 91219 J5121QQK 91219 J5131QQK 91219 J5141QQK 91219 J5151QQK 91219 J5161QQK 91219 J5171QQK 912E0 J5020QQK	

SUBJECT: FRONT WIRING HARNESS INSPECTION/REPLACEMENT AND GROMMET INSTALLATION (SC170)

WARRANTY INFORMATION:
N Code: N99 C Code: C99

Claim Type	Causal P/N	Qty.	Repair Description	Labor Op Code	Op Time	Replacement P/N	Qty.
R	64501 J5000	0	(SC170) Front Wiring Inspection & Grommet Installation	181144R0	0.3 M/H	84253 B1000QQK	1
R	64501 J5000	0	(SC170) Wiper Assembly R&R, Front Wiring Inspection & Grommet Installation	181144R1	0.6 M/H	84253 B1000QQK	1
R	64501 J5000	0	(SC170) 2.0T Wiper Assembly R&R, Front Wiring Inspection, & Wire Harness R&R **(Techline Approval Required)**	181144R2	7.2 M/H	84253 B1000QQK	1
						91215 J5551QQK	1
						91215 J5561QQK	
						91215 J5671QQK	
						91215 J5681QQK	
						91215 J5731QQK	
						91215 J5741QQK	
						91215 J5751QQK	
						91215 J5761QQK	
R	64501 J5000	0	(SC170) 3.3TT Wiper Assembly R&R, Front Wiring Inspection, & Wire Harness R&R **(Techline Approval Required)**	181144R3	8.7 M/H	84253 B1000QQK	1
						91219 J5061QQK	1
						91219 J5071QQK	
						91219 J5101QQK	
						91219 J5111QQK	
						91219 J5121QQK	
						91219 J5131QQK	
						91219 J5141QQK	
						91219 J5151QQK	
						91219 J5161QQK	
						91219 J5171QQK	
						912E0 J5020QQK	

Notes:

If damage to the wire harness is found, please do not proceed with claim submission until the wire harness R&R approval or denial is determined by Techline. This is to avoid prematurely submitting for the rubber grommet installation only and losing the ability to claim for the wire harness R&R.

If necessary, enter sublet code 'X2' for rental expense reimbursement.

*** NOTICE**

VIN inquiry data for this repair is provided for tracking purposes only. Kia retailers should reference SC170 when accessing the WebDCS system.

PE19-004

KIA

TAB 45_TSB_S 170_R2

	GROUP	MODEL
KIA	**Safety Recall Campaign**	**2018MY Stinger (CK)**
	NUMBER	DATE
	SC170 (Rev 2, 05/30/2019)	**December 2018**

SAFETY RECALL CAMPAIGN

SUBJECT: FRONT WIRING HARNESS INSPECTION/REPLACEMENT AND GROMMET INSTALLATION (SC170)

*** NOTICE**

This bulletin has been revised to include additional information. New/revised sections of this bulletin are indicated by a black bar in the margin area.

This bulletin provides the procedure to inspect the Front Wiring Harness for damage to the wiring insulation on some 2018MY Kia Stinger vehicles produced from July 20, 2017 through June 8, 2018.

- If no damage is found, dealers are to install a grommet to cover the hole in the left fender apron panel.
- If wiring damage is found, dealers are to replace the front wiring harness and install a grommet to cover the hole in the left fender apron panel.

The Front Wiring Harness ("harness") is located in the engine and passenger compartment of the vehicle. The harness can come in contact with a burr on the edge of a hole in the sheet metal of the left fender apron body panel. Such contact can damage the insulation of one or more wires and cause an electrical short circuit, increasing the risk of a fire.

Before conducting the procedure, verify the vehicle is included in the list of affected VINs.

*** NOTICE**

There is no charge to the vehicle owner for this repair. Under applicable law, you may not sell or otherwise deliver any affected vehicle until it has been repaired pursuant to the procedures set forth in this bulletin.

*** NOTICE**

To assure complete customer satisfaction, always remember to refer to WebDCS Warranty Coverage (validation) Inquiry Screen (Service → Warranty Coverage → Warranty Coverage Inquiry) for a list of any additional campaigns that may need to be performed on the vehicle before returning it to the customer.

File Under: <Safety Recall Campaign>

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

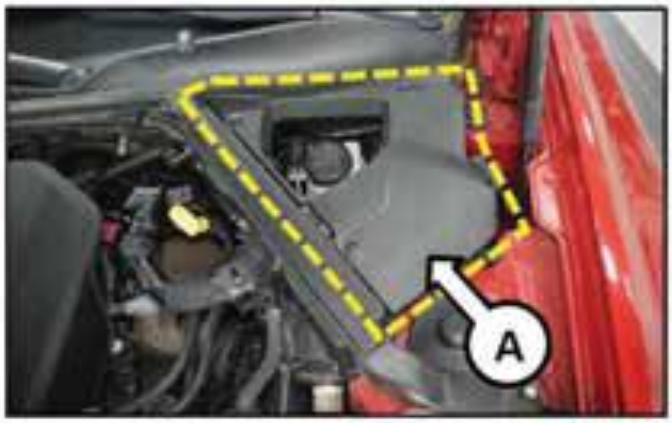
SUBJECT: FRONT WIRING HARNESS INSPECTION/REPLACEMENT AND GROMMET INSTALLATION (SC170)

Inspection Procedure:

1. Record the customer's radio presets and then disconnect the negative "-" battery terminal.



2. Remove the engine side cover (A).



3. Disconnect the two (2) ECU connectors (B).



4. Detach the hood seal (C).



5. Remove the two (2) harness protector retaining nuts (D).

Tightening torque for nuts (D):
43.4 - 69.4 lb.in (4.9 - 7.8 Nm, 0.5 - 0.8 kgf.m)



6. Remove the one (1) ECU bracket mounting bolt and two (2) bracket mounting nuts and then remove the ECU and bracket assembly (E).

Tightening torque (bolt and nuts):
7.2 - 8.7 lb.ft (9.8 - 11.8 Nm, 1.0 - 1.2 kgf.m)

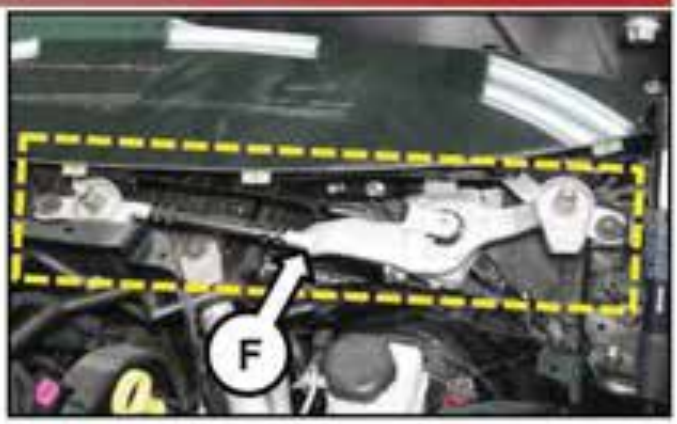


7. Visually inspect the harness for interference.
   - If the harness is touching the left fender apron panel (☒), proceed to the next step.
   - If the harness is not touching the panel (☑), proceed to step 13 on page 5.





8. Remove the windshield wiper assembly (F) by referring to steps 2 through 5 of the "Body Electrical System → Windshield Wiper/Washer → Front Wiper Motor → Repair procedures" chapter in the applicable Shop Manual.



9. Remove the two (2) wire harness protector retaining nuts (G) located by the brake booster.

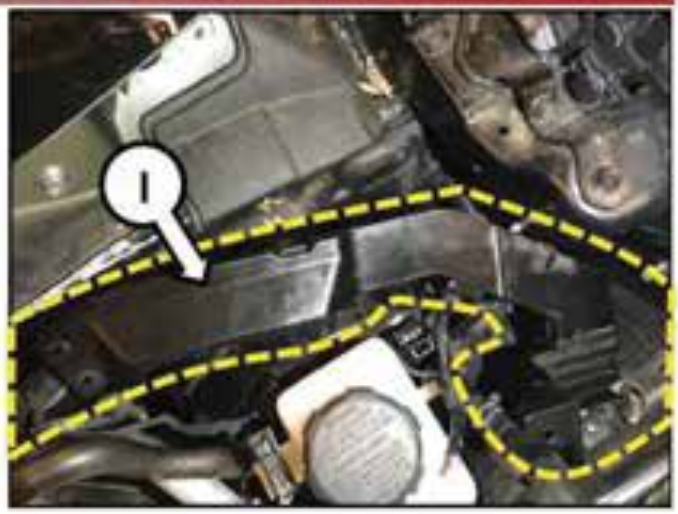




10. Disconnect the brake master cylinder connector (H).



11. Carefully move the harness and protector (I) away from the firewall enough to allow access to the lower area of the harness.



12. Reach behind the hood and into the well area to slightly pull up the harness. Thoroughly inspect the harness for any damage.
    - If there is damage to the harness, open a Techline case online and **do not proceed** with claim submission until wire harness replacement approval or denial is determined. See page 6 for the Front Wiring Harness Replacement procedure.
    - If there is no damage to the harness, proceed to the next step.



13. Install a rubber grommet at the opening (K) shown.



14. Reinstall all removed components in the reverse order of removal.

15. Verify proper operation of the vehicle and restore the customer's radio presets.

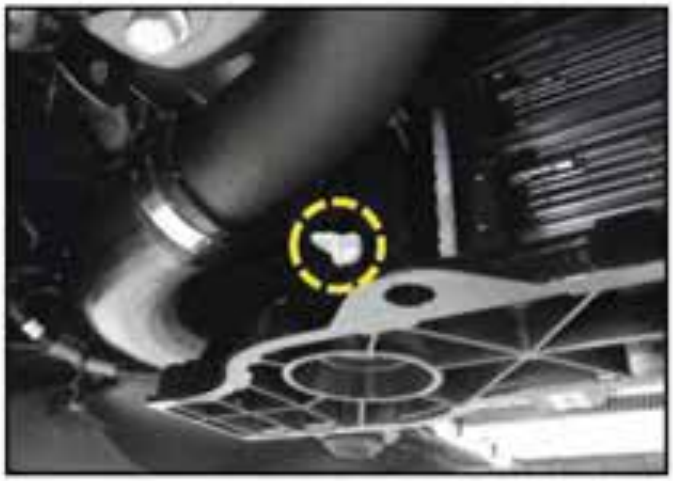
SUBJECT: FRONT WIRING HARNESS INSPECTION/REPLACEMENT AND GROMMET INSTALLATION (SC170)

Front Wiring Harness Replacement Procedure:

*** IMPORTANT**

Refer to the "Body Electrical System → General Information" chapter in the applicable Shop Manual on KGIS for important information on handling connectors, wires, and harnesses.

1. With the vehicle on a lift, remove the engine under cover and begin coolant drain.

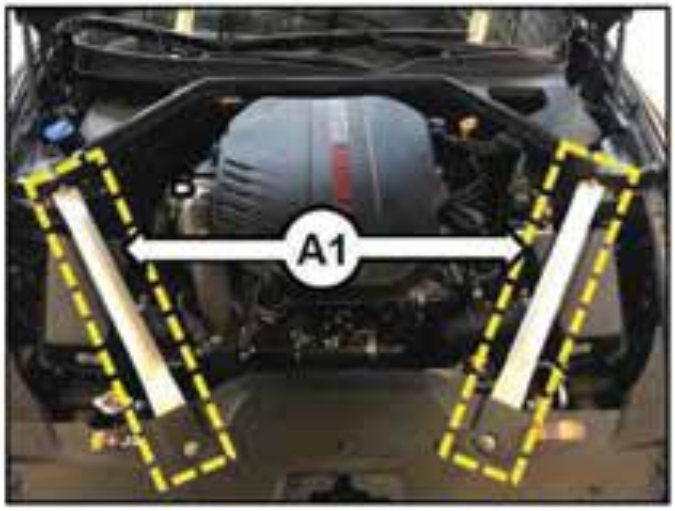


2. While draining the coolant with a small catch container underneath the vehicle, remove the two (2) strut bars (A1).

*** NOTICE**

Be sure to close the drain plug when coolant drain is complete.

Tightening torque (strut bars):
34 – 45 lb.ft (46.4 – 60.8 N.m, 4.7 – 6.2 kgf.m)



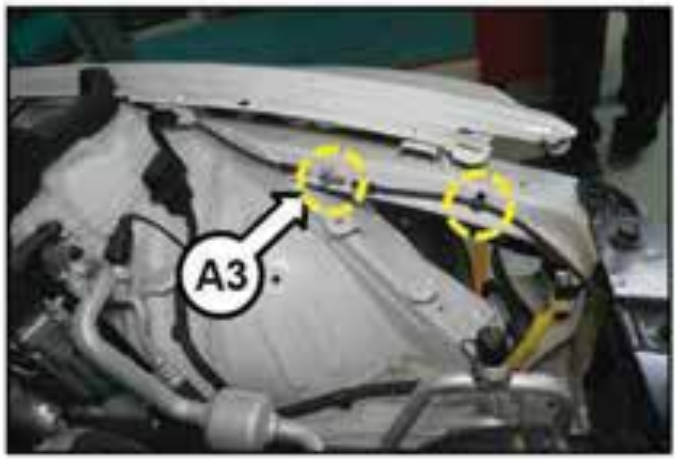
3. Recover the AC refrigerant by referring to the "Heating, Ventilation, and Air Conditioning → Air Conditioning System → Repair procedures" chapter in the applicable Shop Manual on KGIS.



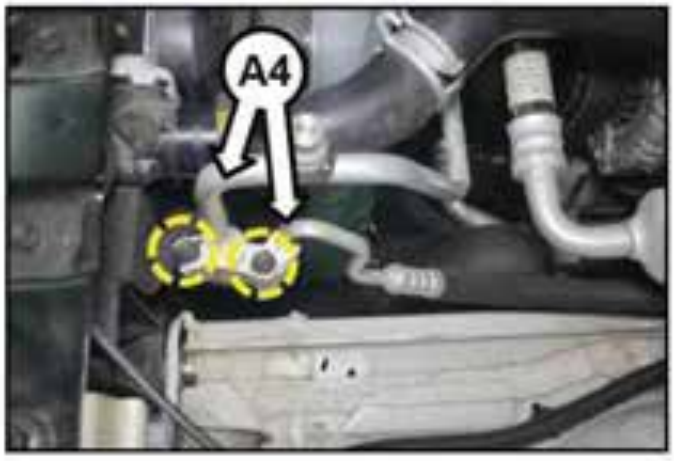
4. Remove the headlamps (A2) by referring to the "Body Electrical System → Lighting System → Headlamps → Repair procedures" chapter in the applicable Shop Manual on KGIS.



5. Separate the hood latch cable at the cable joint (A3) and detach the cable retaining clip.



6. Remove the two (2) air conditioning pipe (high pressure and a/c pressure transducer) retaining nuts and detach the two pipes (A4).



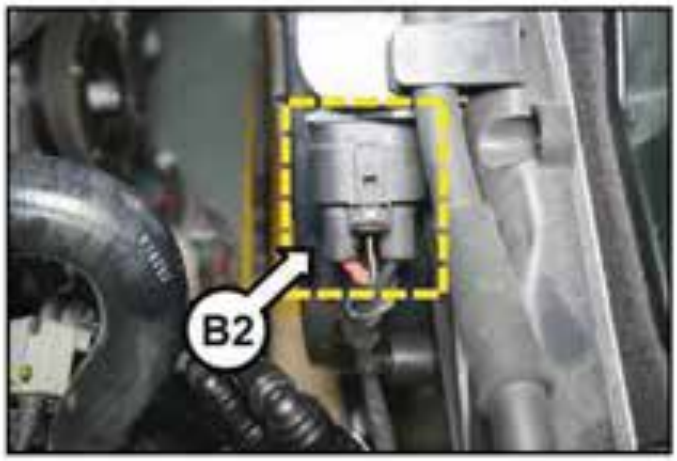
7. Detach the upper and lower radiator hoses from the radiator.



8. Detach the transmission oil cooler inlet and outlet pipes (B1) from the transmission cooler.



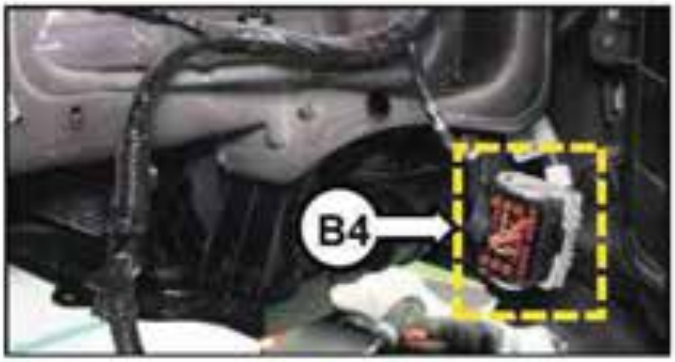
9. Disconnect the cooling fan connector (B2).



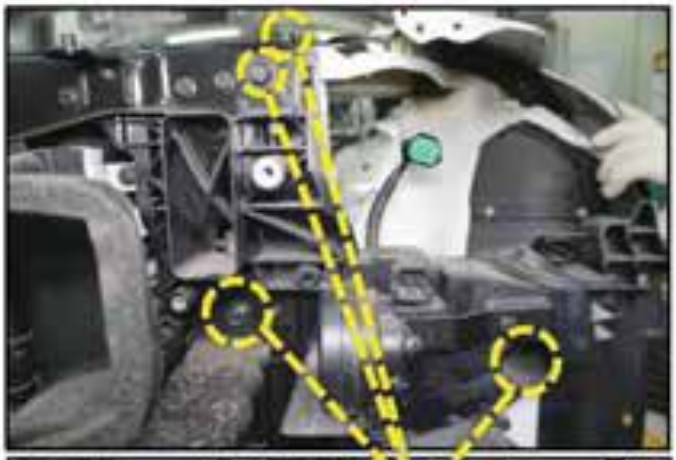
10. Detach the intercooler inlet and outlet hoses (B3).

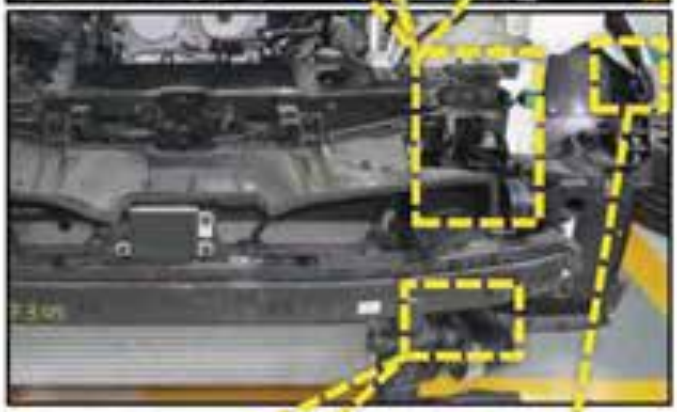


11. Disconnect the front end module connector (B4).



12. Remove the seven (7) front end module carrier retaining bolts on <u>each side</u> of the carrier and remove the front end module carrier.









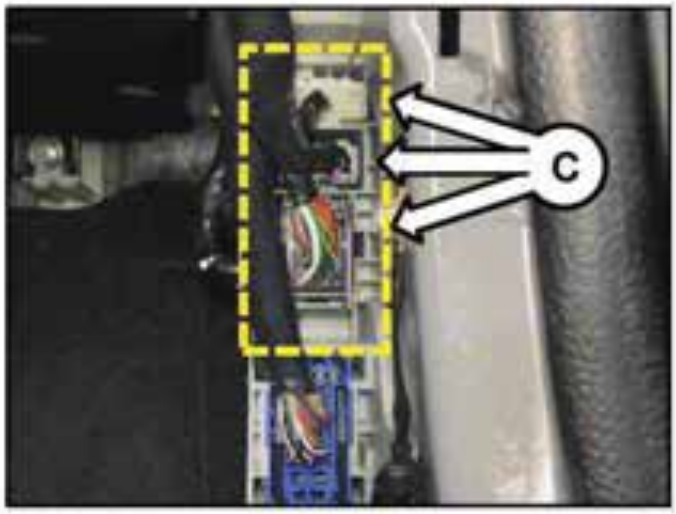
13. Remove the engine and transmission assembly (A) by referring to the "Engine Mechanical System → Engine and Transmission Assembly → Engine and Transmission Assembly → Repair procedures" chapter in the applicable Shop Manual on KGIS.



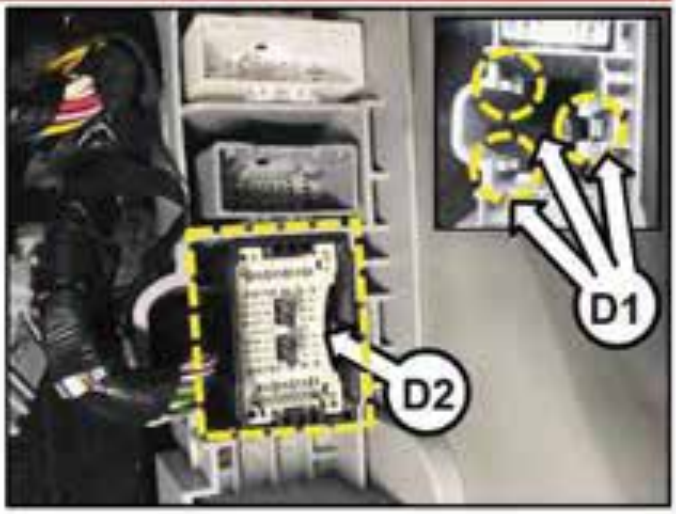
14. Remove the glove box assembly (B) by referring to the "Body (Interior and Exterior) → Crash Pad → Glove Box Housing → Repair procedures" chapter in the Shop Manual on KGIS.



15. Disconnect the three upper connectors (C) at the floor harness joint housing located at the front passenger footwell.



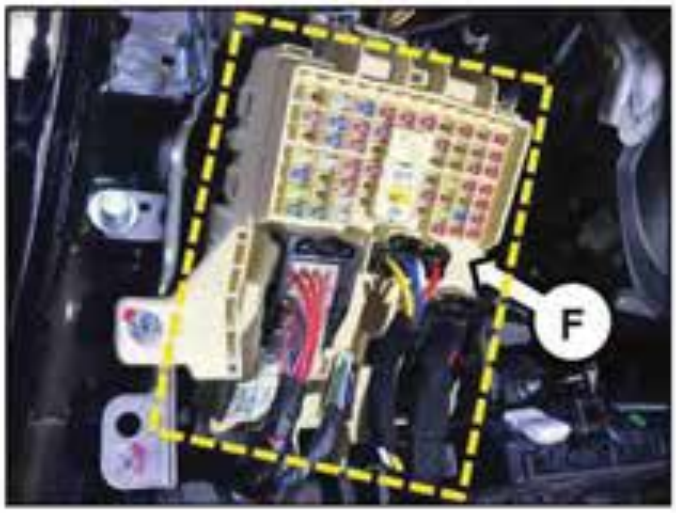
16. Carefully release the three (3) locking tabs (D1) and remove the connector (D2).



17. Disconnect the two (2) connectors (E) at the Electric Oil Pump Inverter, located above the front passenger foot well floor harness joint housing.



18. Remove the Integrated Central Control Unit (ICU) (F) by referring to the "Body Electrical System → Fuses And Relays → Relay Box (Passenger Compartment) → Repair procedures" chapter in the applicable Shop Manual on KGIS.

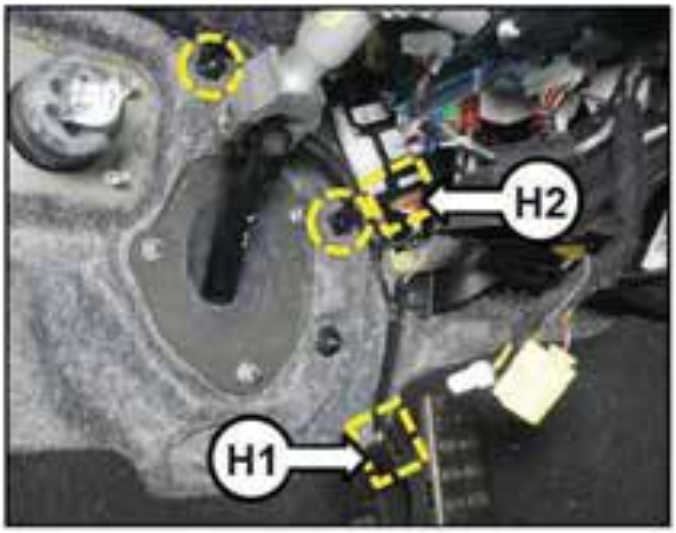


19. Refer to the "Brake System → Brake System → Brake Pedal → Repair procedures" chapter in the applicable Shop Manual on KGIS to partially remove the brake pedal assembly (G) enough to remove the wiring harness past the brake pedal assembly.

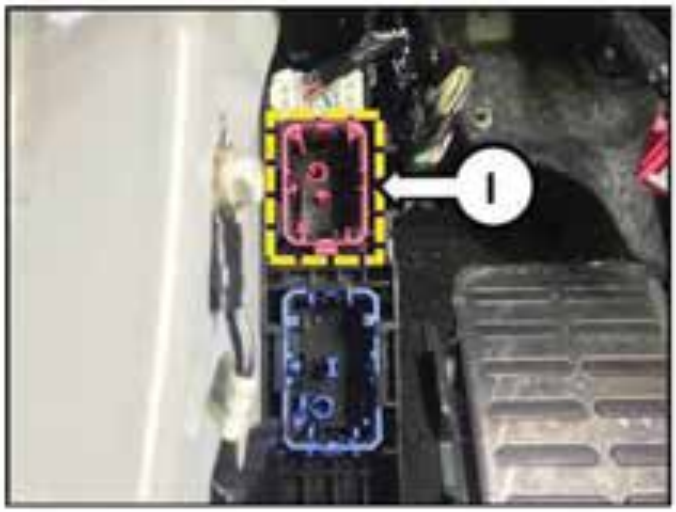


20. Disconnect the Accelerator Pedal Position Sensor (H1) and if equipped, disconnect the AWD ECU connector (H2). Detach the harness retaining clips.

Note: The brake pedal assembly was completely removed for demonstration of wiring harness routing only. Complete removal of the brake pedal assembly is not necessary.



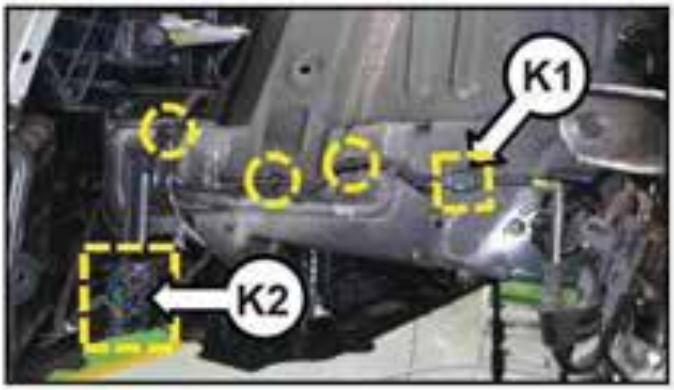
21. Remove the center connector (I) from the floor harness joint housing located at the driver footwell.



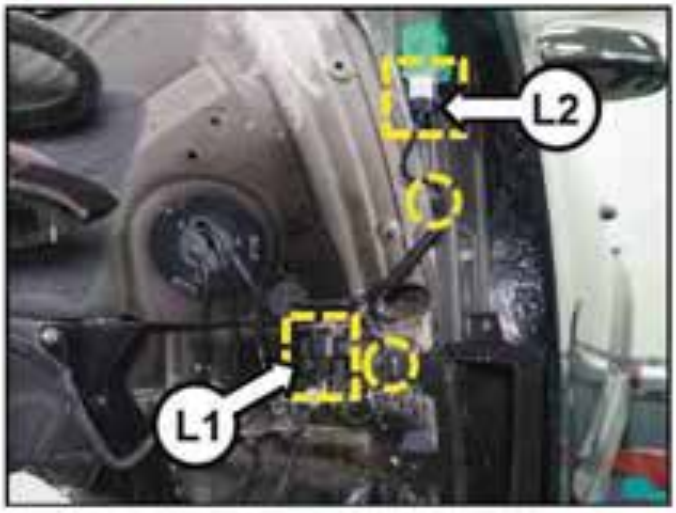
22. Remove both front fender liners (wheel guards) (J).



23. Disconnect the left front wheel speed sensor (K1) and extension harness (K2) and detach the wiring harness retaining clips.



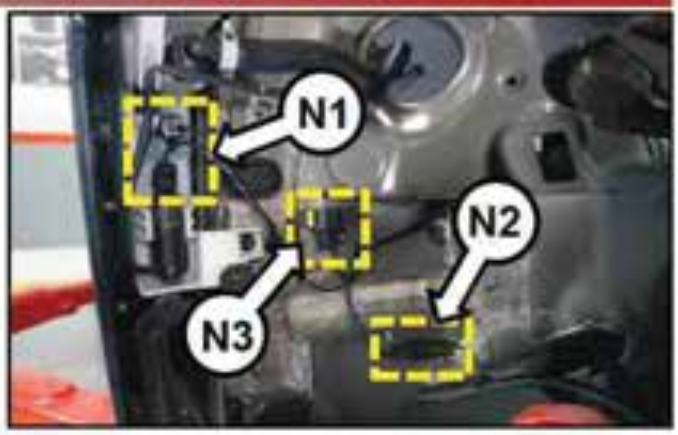
24. Disconnect the external buzzer connector (L1) and, if equipped, disconnect the left front electronic control suspension (ECS) G-sensor connector (L2). Detach the wiring harness retaining clips.



25. Disconnect the right front wheel speed sensor (M1) and ground (M2). Detach the wiring harness retaining clips.



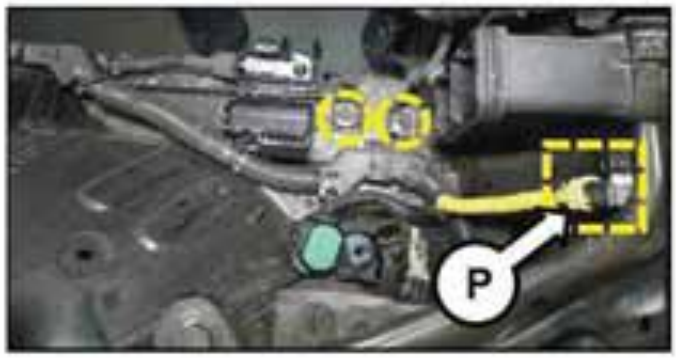
26. Disconnect the washer motor and level sensor connectors (N1), battery harness connector (N2), and, if equipped, the right front ECS connector (N3). Detach the wiring harness retaining clips.



27. Remove the ground retaining nut and disconnect the ground (O).



28. Disconnect the front passenger impact sensor connector (P). Detach the wiring harness retaining clips.



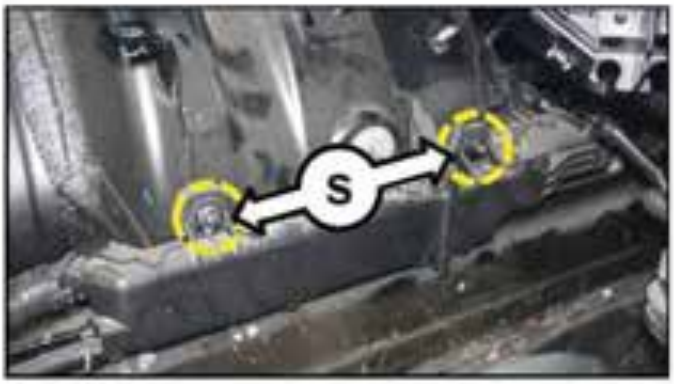
29. Remove the two (2) ground retaining bolts and disconnect the two (2) ground cables (Q).



30. If not already performed, disconnect the battery cable (R1) and then remove the two (2) battery junction block retaining nuts (R2).



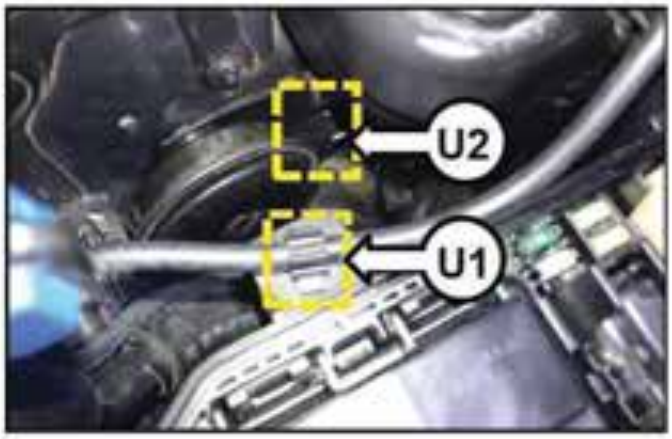
31. Remove the two (2) wiring harness protector retaining nuts (S).



32. Remove the three (3) junction box retaining bolts for removal of the junction box (T).



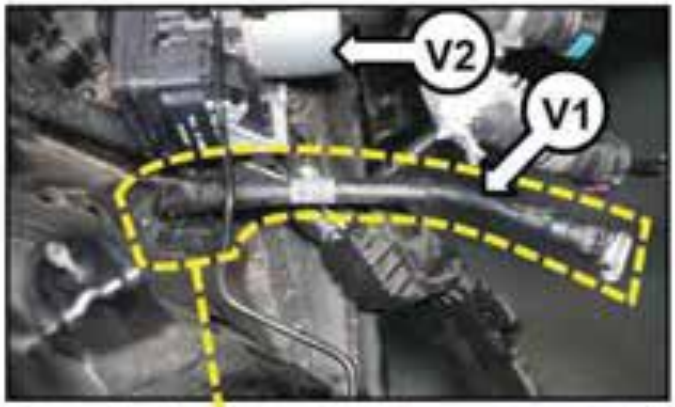
33. Detach the washer nozzle clip (U1) from the junction box (T) and then disconnect the horn connector (U2).



34. Remove the two (2) wiring harness protector retaining nuts.

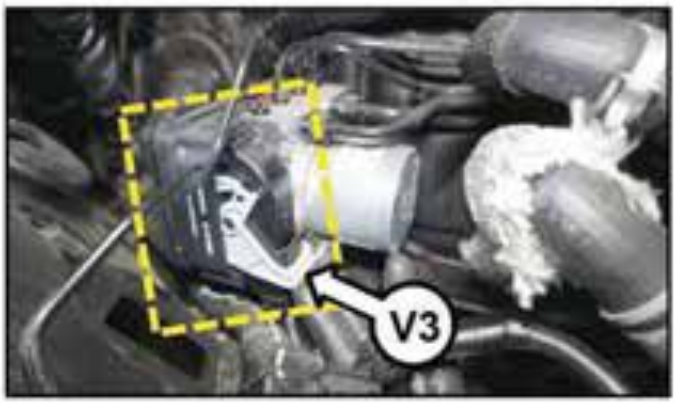


35. Remove the ground cable and grommet (V1) located next to the Electronic Stability Control (ESC) module (V2).





36. Disconnect the ESC connector (V3).



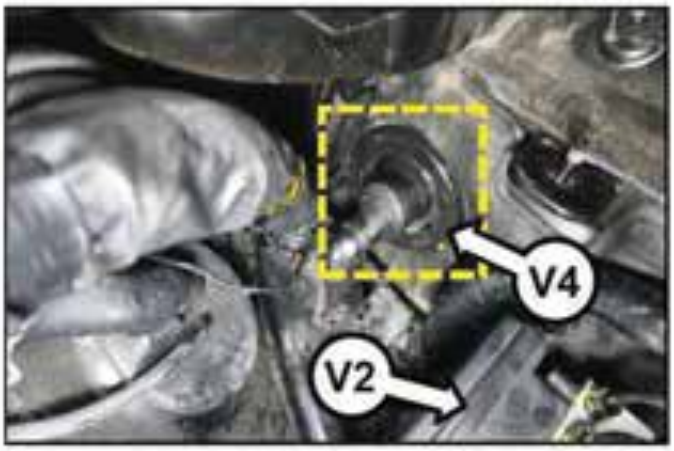
37. Remove the two (2) ESC module retaining bolts.



38. Detach the two (2) wiring harness retaining clips.



39. Detach the grommet (V4) from the firewall, located behind the ESC module (V2) and pull out connector (D2) removed in step 4 of this procedure.



40. Remove the wiring harness from underneath the ESC module (V2).



41. Remove the protected section of the wiring harness between the ESC module and hardline.



42. Complete the passenger side of the front wiring harness removal.



43. Detach the two (2) wiring harness protector retaining clips above the heater exchange valve.



SUBJECT: FRONT WIRING HARNESS INSPECTION/REPLACEMENT AND GROMMET INSTALLATION (SC170)

45. Ensure the wiring harness retaining clips are detached from above the brake booster and the wiper motor and master cylinder connectors have been removed.

    Trace the wiring harness and detach all wiring harness retaining clips.

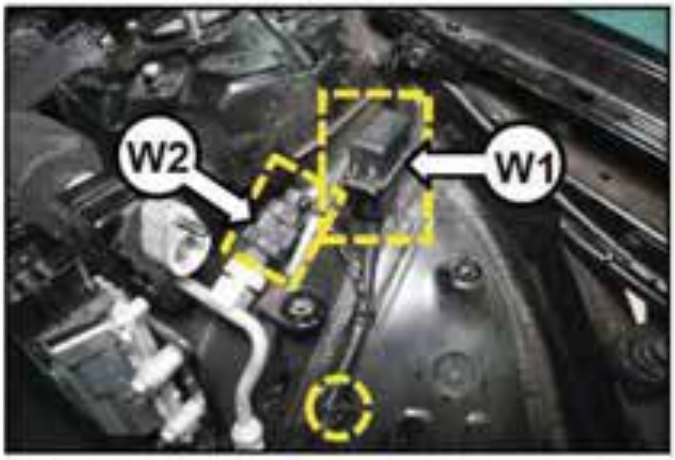








46. Detach the Multipurpose Check connector (W1) from the vehicle and disconnect the A/C Pressure Transducer connector (W2). Detach the wiring harness retaining clip.



47. Disconnect the left front impact sensor connector (X).



48. Remove the two (2) ground retaining nuts and disconnect the two (2) ground cables (Y).

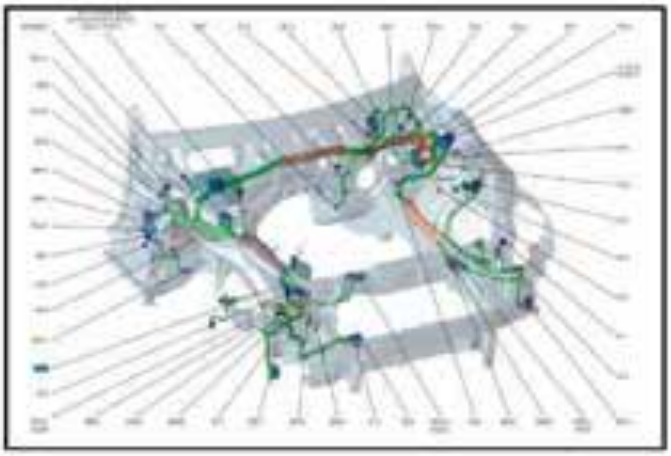


49. Remove the grommet (Z) located by the left fender apron and completely remove the rest of the front wiring harness between the brake booster and lines.



50. Install the new front wiring harness, ensuring proper routing of harness and secured connections at all connectors.

    Refer to the "Harness Layout → Front Harness → Schematic Diagrams" chapter in the applicable ETM Manual on KGIS for details.



51. Verify proper operation of the vehicle and erase any stored DTCs (e.g., EPS, ESC, and TPMS) that may have been set by this procedure. Verify no leaks exist and ensure engine oil and coolant are at their proper level. If any DTCs are still active, follow any related diagnosis and repair as needed.

SUBJECT: FRONT WIRING HARNESS INSPECTION/REPLACEMENT AND GROMMET INSTALLATION (SC170)

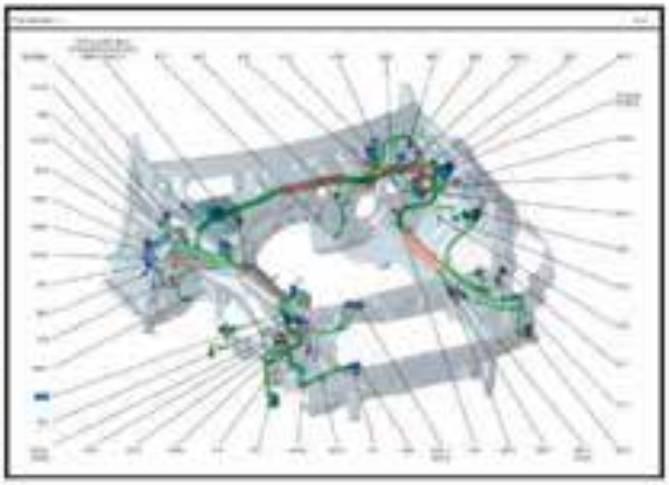
AFFECTED VEHICLE RANGE:

Model	Production Date Range
Stinger (CK)	July 20, 2017 through June 8, 2018

REQUIRED PART:

Part Name	Part Number	Figure
Rubber Grommet	84253 B1000QQK	

RELATED PART:

Part Name	Part Number	Figure
2.0T Front Wiring Harness	91215 J5550QQK 91215 J5560QQK 91215 J5670QQK 91215 J5680QQK 91215 J5730QQK 91215 J5740QQK 91215 J5750QQK 91215 J5760QQK	
3.3TT Front Wiring Harness	91219 J5060QQK 91219 J5070QQK 91219 J5100QQK 91219 J5110QQK 91219 J5120QQK 91219 J5130QQK 91219 J5140QQK 91219 J5150QQK 91219 J5160QQK 91219 J5170QQK 912E0 J5020QQK	

SUBJECT: FRONT WIRING HARNESS INSPECTION/REPLACEMENT AND GROMMET INSTALLATION (SC170)

WARRANTY INFORMATION:
N Code: N99 C Code: C99

Claim Type	Causal P/N	Qty.	Repair Description	Labor Op Code	Op Time	Replacement P/N	Qty.
R	64501 J5000	0	(SC170) Front Wiring Inspection & Grommet Installation	181144R0	0.3 M/H	84253 B1000QQK	1
R	64501 J5000	0	(SC170) Wiper Assembly R&R, Front Wiring Inspection & Grommet Installation	181144R1	0.6 M/H	84253 B1000QQK	1
R	64501 J5000	0	(SC170) 2.0T Wiper Assembly R&R, Front Wiring Inspection, & Wire Harness R&R **(Techline Approval Required)**	181144R2	7.2 M/H	84253 B1000QQK	1
						91215 J5550QQK	1
						91215 J5560QQK	
						91215 J5670QQK	
						91215 J5680QQK	
						91215 J5730QQK	
						91215 J5740QQK	
						91215 J5750QQK	
						91215 J5760QQK	
R	64501 J5000	0	(SC170) 3.3TT Wiper Assembly R&R, Front Wiring Inspection, & Wire Harness R&R **(Techline Approval Required)**	181144R3	8.7 M/H	84253 B1000QQK	1
						91219 J5060QQK	1
						91219 J5070QQK	
						91219 J5100QQK	
						91219 J5110QQK	
						91219 J5120QQK	
						91219 J5130QQK	
						91219 J5140QQK	
						91219 J5150QQK	
						91219 J5160QQK	
						91219 J5170QQK	
						912E0 J5020QQK	

Notes:
If damage to the wire harness is found, please do not proceed with claim submission until the wire harness R&R approval or denial is determined by Techline. This is to avoid prematurely submitting for the rubber grommet installation only and losing the ability to claim for the wire harness R&R.

If necessary, enter sublet code 'X2' for rental expense reimbursement.

★ NOTICE

VIN inquiry data for this repair is provided for tracking purposes only. Kia retailers should reference SC170 when accessing the WebDCS system.

PE19-004

KIA

TAB 46_S 170 - e le P in i l ette

December 13, 2018

Attention: All Dealer Principals

Kia Motors America, Inc., pursuant to the National Traffic and Motor Vehicle Safety Act, is conducting a Safety Recall Campaign to inspect the front wiring harness for damage on some 2018 MY Kia Stinger vehicles produced from July 20, 2017 thru June 8, 2018. The front wiring harness is located in the engine and passenger compartments of the vehicle. The harness can come in contact with a burr on the edge of a hole in the sheet metal of the left fender apron body panel. Such contact can damage the insulation on one or more wires and cause an electrical short circuit, increasing the risk of a fire.

The Technical Service Bulletin that provides vehicle inspection and repair procedures, affected VIN production range, and warranty claim information will be posted on the Kia Global Information System (KGIS) at www.kiatechinfo.com during the week of December 17, 2018.

Your Service Manager was sent a copy of the owner notification letter and a Q&A guide for recall questions both of which describe the issue and information on how to access the list of affected 2018 MY Stinger vehicles.
Kia will notify the vehicle owners on **December 20, 2018.**

NHTSA ADVISORY: It is a violation of Federal law for a dealer to deliver a new motor vehicle covered by this notification under a sale or lease until the defect is remedied.

What Should You Do?
Please make certain the appropriate personnel in your dealership are familiar with the details of this recall campaign to ensure proper responses to customer inquiries and requests to have the campaign performed on their 2018 MY Kia Stinger vehicles.

LEGAL PRIVACY LIABILITY NOTICE: Pursuant to the terms of the Dealer Sales and Service Agreement and the Gramm-Leach-Bliley federal consumer privacy act, you are required to keep confidential any and all information and documents provided to you by Kia Motors America, Inc. or generated by you in the conduct of carrying out work under that Agreement regarding Kia vehicle purchasers and owners, including but not limited to warranty claim information. Kia dealers may use such owner information for the sole purpose of conducting and performing this safety recall campaign, and for no other purpose.

Your prompt attention in completing this recall campaign is appreciated. If you have any questions, please contact your Kia District Parts & Service Manager.

Sincerely,

Neem Van der Reest
Manager, Technical Services & Engineering

Enclosures

PE19-004

KIA

TAB 47_S 170 - A

SC170 –2018 MY STINGER FRONT WIRING HARNESS
SAFETY RECALL CAMPAIGN
Q & A

December 13, 2018

Q1. What type of campaign is Kia conducting?

A1. Kia is conducting a safety recall campaign to inspect and, if necessary, replace the front wiring harness on some 2018 MY Stinger vehicles manufactured from July 20, 2017 through June 8, 2018. Damage to the front wiring harness can increase the risk of an electrical short circuit, increasing the risk of a fire.

Q2. What vehicles are affected by the recall?

A2. Some 2018 MY Stinger vehicles manufactured from July 20, 2017 through June 8, 2018.

Q3. How many customer vehicles are affected by this recall?

A3. Approximately 16,011 vehicles are included in this campaign.

Q4. What is the concern with the Front Wiring Harness?

A4. *The Front Wiring Harness ("harness") is located in the engine and passenger compartment of the vehicle. The harness can come in contact with a burr on the edge of a hole in the sheet metal of the left fender apron body panel. Such contact can damage the insulation of one or more wires and cause an electrical short circuit, increasing the risk of a fire.*

Q5. What Will Happen If Damage to The Front Wiring Harness Is Detected?

A5. If damage to the harness is detected, the Malfunction Indicator Lamp ("MIL")  *may be illuminated, and/or the vehicle could be placed in a reduced power and acceleration mode [referred to as "Limp Home Mode"]. In Limp Home Mode, the vehicle can continue to be operated for a* ***limited time*** *to permit it to be driven to a safe location. However, the vehicle will have a reduced maximum speed, and it may accelerate very slowly or may not accelerate at all.*

Q6. Can you describe the recall campaign and fix?

A6. Kia has advised its authorized dealers to inspect the front wiring harness for damage. If no damage is found, the dealer will install a grommet to cover the hole in the left fender apron panel. If wiring damage is found, the front wiring harness will be replaced, and a grommet will be installed to cover the hole in the left fender apron panel. The work will be performed at Kia's expense at no cost to the customer for parts or labor.

Q7. How was the issue discovered?

A7. Through the regular monitoring of field information.

Q8. What should vehicle owners do when they receive the notification?

A8. *In the interest of the safety of their passengers, as well as their own safety, the customers should immediately contact their Kia dealer to arrange for the recall repair to be conducted. The estimated time required to inspect your vehicle will be approximately one (1) hour. If the front wiring harness needs to be replaced, additional time will be required.*

Q9. Have there been any deaths or injuries as a result of this condition?

A9. There have been no deaths or injuries.

Q10. Has Kia had any litigation regarding this condition?

A10. No.

Q11. Will this cost vehicle owners any money?

A11. No. Kia will perform the recall repair at no cost to the customer.

Q12. What about customers who may have already paid to have this issue remedied?

A12. If the customer has incurred expense to have this issue remedied prior to the date of this notice, the customer may have the opportunity to obtain reimbursement for that expense. Customers may submit their receipts online to Kia via the Owners section of www.kia.com or mail their receipts with a cover letter directly to Kia for review and consideration:

Consumer Assistance Center
Kia Motors America, Inc.
P.O. Box 52410
Irvine, CA 92619-2410
1-800-333-4542

Q13. How long will the repair take?

A13. The estimated time required to inspect the vehicle is approximately one (1) hour. If front wiring harness replacement is needed, additional time will be required. The actual time, however, can vary depending on the dealer's work schedule. We recommend that the customer contact the dealer for an exact estimate of how long they may need the vehicle and schedule a service appointment to minimize

inconvenience. (Most Kia dealers have online appointment scheduling via their dealership web sites to maximize your convenience).

Q14. How will owners of the affected vehicles be notified?

A14. Kia will be notifying owners of the affected vehicles by first-class mail on ***December 20, 2018.***

Q15. Are there any restrictions on an owner's eligibility?

A15. No.

Q16. If a customer has an immediate question, where can they get further information?

A16. The customer can contact their local Kia dealership or call Kia's Consumer Assistance Center at 1-800-333-4KIA (4542), Monday through Friday, 5 AM to 6 PM Pacific Standard Time, or via the internet @ www.kia.com (Owner's Section).

PE19-004

KIA

TAB 48_S 170 - Se i e n e ette

December 13, 2018

Attention: All Kia Parts & Service Managers

Kia Motors America, Inc., pursuant to the National Traffic and Motor Vehicle Safety Act, is conducting a Safety Recall Campaign to inspect the front wiring harness for damage on some 2018 MY Kia Stinger vehicles produced from July 20, 2017 thru June 8, 2018. The Front Wiring Harness ("harness") is located in the engine and passenger compartment of the vehicle. The harness can come in contact with a burr on the edge of I hole in the sheet metal in the left fender apron body panel. Such contact can damage the insulation of one or more wires and cause an electrical short circuit, increasing the risk of a fire.

If damage to the harness is detected, the Malfunction Indicator Lamp ("MIL") may be illuminated, and/or the vehicle could be placed in a reduced power and acceleration mode [referred to as "Limp Home Mode"]. In Limp Home Mode, the vehicle can continue to be operated for a **limited time** to permit the vehicle to be driven to a safe location. However, the vehicle will have a reduced maximum speed, and it may accelerate very slowly or may not accelerate at all.

The Technical Service Bulletin that provides vehicle inspection and repair procedures, affected VIN production range, and warranty claim information will be posted on the Kia Global Information System (KGIS) at www.kiatechinfo.com during the week of December 17, 2018.

PARTS INFORMATION – An initial shipment of the grommet will go out to all dealers the week of December 20th for dealer stock vehicles and a portion of the retail units sold.

Enclosed you will find a copy of the owner notification letter and a Q&A Guide for recall questions, both of which describe the issue. A list of Kia Stinger vehicle owners affected by this recall can be accessed on WEBDCS. Log onto the site, select the Campaigns Tab, click on Open Campaign Report in the left side menu, and select **SC170** to generate the list.

Notices to the affected 2018 MY Stinger vehicle owners will be mailed on **December 20, 2018.** Please start performing the repairs immediately on any affected vehicles currently in your inventory.

Also, please make certain the appropriate personnel in your dealership are familiar with the details of this recall to ensure proper responses to customer inquiries and request to have the recall performed on their 2018 MY Stinger vehicles. This Safety Recall represents an opportunity for your service department to deliver an exceptional service experience (e.g. flexible service appointment process, car wash and vacuum and timely service).

NHTSA ADVISORY: It is a violation of Federal law for a dealer to deliver a new motor vehicle covered by this notification under a sale or lease until the defect is remedied.

LEGAL PRIVACY LIABILITY NOTICE: Pursuant to the terms of the Dealer Sales and Service Agreement and the Gramm-Leach-Bliley federal consumer privacy act, you are required to keep confidential any and all information and documents provided to you by Kia Motors America, Inc. or generated by you in the conduct of carrying out work under that Agreement regarding Kia vehicle purchasers and owners, including but not limited to warranty claim information. Kia dealers may use such owner information for the sole purpose of conducting and performing this safety recall campaign, and for no other purpose.

Your prompt attention in completing this recall is appreciated. If you have any questions, please contact your Kia District Parts and Service Manager.

Sincerely,

Neem Van der Reest
Manager, Technical Services & Engineering

Enclosures

PE19-004

KIA

TAB 49_ PI1802_ P

July 16, 2018

Attention: All Kia Dealer Principals

Kia is conducting a Product Improvement Campaign to perform a software update to the Engine Control Unit (ECU) to protect the engine from excessive connecting rod bearing damage. The affected vehicles include:

- All 2015-2018 MY Sorento vehicles equipped with 2.4L Gasoline Direct Injection (GDI) and 2.0L Turbocharged GDI (T-GDI) engines;
- All 2014-2018 MY Sportage vehicles equipped with 2.4L Gasoline Direct Injection (GDI) and 2.0L Turbocharged GDI (T-GDI) engines;
- Some 2014 MY Optima vehicles equipped with 2.4L Gasoline Direct Injection (GDI) engines produced at KMC from August 29, 2013 to April 25, 2014; and
- All 2015-2018 MY Optima vehicles equipped with 2.4L Gasoline Direct Injection (GDI) and 2.0L Turbocharged GDI (T-GDI) engines.

Kia recently developed a Knock Sensor Detection System (KSDS) that detects vibrations indicating the onset of excessive connecting rod bearing wear. The KSDS is designed to alert the driver at an early stage of bearing wear before the occurrence of severe engine damage, including engine failure. If vibrations caused by bearing wear start to occur, the Malfunction Indicator Lamp (MIL)  will blink continously, and the vehicle will be placed in Limp Home Mode.

The Technical Service Bulletin that provides vehicle repair procedures, affected VIN production range, and warranty claim information will be posted on the Kia Global Information System (KGIS) at www.kiatechinfo.com and the campaign documents will be posted on kdealer.com in the week of **July 23, 2018.**

LIFETIME WARRANTY COVERAGE FOR THIS ISSUE. Kia is providing lifetime engine warranty coverage for this issue **only** (DTC P1326), to both new and used vehicle owners of the affected vehicles identified above, for engine long block assembly repairs needed due to resulting bearing damage upon completion of the Product Improvement Campaign.

What Should You Do

Please make certain the appropriate personnel in your dealership are familiar with the details of this Product Improvement Campaign to ensure proper responses to customer inquiries and requests to have the campaign performed on their vehicles. Kia will notify owners **starting on July 26, 2018.**

LEGAL PRIVACY LIABILITY NOTICE: Pursuant to the terms of the Dealer Sales and Service Agreement and the Gramm-Leach-Bliley federal consumer privacy act, you are required to keep confidential any and all information and documents provided to you by Kia Motors America, Inc. or generated by you in the conduct of carrying out work under that Agreement regarding Kia vehicle purchasers and owners, including but not limited to warranty claim information. Kia dealers may use such owner information for the sole purpose of conducting and performing this product improvement campaign, and for no other purpose.

Your prompt attention in completing this repair is appreciated. If you have any questions, please contact your Kia District Parts & Service Manager.

Sincerely,



Neem Van der Reest
Quality Analysis Manager

Enclosures

PE19-004

KIA

TAB 50_ PI1802_ S

July 16, 2018

Attention: All Kia Dealer Service Managers

Kia is conducting a Product Improvement Campaign to perform a software update to the Engine Control Unit (ECU) to protect the engine from excessive connecting rod bearing damage. The affected vehicles include:

- All 2015-2018 MY Sorento vehicles equipped with 2.4L Gasoline Direct Injection (GDI) and 2.0L Turbocharged GDI (T-GDI) engines;
- All 2014-2018 MY Sportage vehicles equipped with 2.4L Gasoline Direct Injection (GDI) and 2.0L Turbocharged GDI (T-GDI) engines;
- Some 2014 MY Optima vehicles equipped with 2.4L Gasoline Direct Injection (GDI) engines produced at KMC from August 29, 2013 to April 25, 2014; and
- All 2015-2018 MY Optima vehicles equipped with 2.4L Gasoline Direct Injection (GDI) and 2.0L Turbocharged GDI (T-GDI) engines.

Kia recently developed a Knock Sensor Detection System (KSDS) that detects vibrations indicating the onset of excessive connecting rod bearing wear. The KSDS is designed to alert the driver at an early stage of bearing wear before the occurrence of severe engine damage, including engine failure. If vibrations caused by bearing wear start to occur, the Malfunction Indicator Lamp (MIL)  will blink continuously, and the vehicle will be placed in Limp Home Mode. This will reduce further damage to the engine and ensure that the vehicle occupants are not exposed to the risk of a more severe engine failure. At that time, Diagnostic Trouble Code ("DTC") P1326, specific to the KSDS, will be recorded in the ECU. The vehicle can continue to be operated for a limited time in Limp Home Mode, but it will accelerate slowly and have a reduced maximum speed. Also, engine RPMs will be limited to approximately 1800-2000 RPM.

LIFETIME WARRANTY COVERAGE FOR THIS ISSUE. Kia is providing lifetime engine warranty coverage for this issue **only** (DTC P1326), to both new and used vehicle owners of the affected vehicles identified above, for engine long block assembly repairs needed due to resulting bearing damage upon completion of the Product Improvement Campaign.

The Technical Service Bulletin that provides vehicle repair procedures, affected VIN production range, and warranty claim information will be posted on the Kia Global Information System (KGIS) at www.kiatechinfo.com and the campaign documents will be posted on kdealer.com in the week of **July 23, 2018.**

A copy of the owner notification letter and a Q&A Guide for campaign questions, both of which describe the issue will be made available the week of July 23, 2018. A list of retail Kia Sorento, Optima and Sportage vehicle owners affected by this campaign can be accessed on WEBDCS after the date of the owner notification.

NOTE: Kia will begin the owner notification mailing for the affected 2014-2015 MY Sorento, Optima and Sportage as follows:

- 2015 MY Sorento: July 26, 2018
- 2014-2015 MY Optima: Around August 20, 2018
- 2014-2015 MY Sportage: Around August 20, 2018

Owner notification mailings for the subsequent model years (2016-2018MY) will continue in the coming months until all owners have been notified. Customers are being strongly encouraged to have the repair

completed within 45 days from the date of receipt of the owner notification. **We appreciate your support in encouraging customers to have this Product Improvement Campaign completed as quickly as possible.**

Please start performing the repairs on any affected vehicles currently in your inventory to ensure that the Product Improvement Campaign has been completed prior to delivery.

Please make certain the appropriate personnel in your dealership are familiar with the details of this campaign to ensure proper responses to customer inquiries and requests to have the campaign performed on their Sorento, Optima and Sportage vehicles. Be sure to remind your customers of the importance of following the vehicle's maintenance schedule and keeping maintenance records.

LEGAL PRIVACY LIABILITY NOTICE: Pursuant to the terms of the Dealer Sales and Service Agreement and the Gramm-Leach-Bliley federal consumer privacy act, you are required to keep confidential any and all information and documents provided to you by Kia Motors America, Inc. or generated by you in the conduct of carrying out work under that Agreement regarding Kia vehicle purchasers and owners, including but not limited to warranty claim information. Kia dealers may use such owner information for the sole purpose of conducting and performing this product improvement campaign, and for no other purpose

Your prompt attention in completing this campaign is appreciated. If you have any questions, please contact your Kia District Parts & Service Manager.

Sincerely,



Neem Van der Reest
Quality Analysis Manager
Enclosures

PE19-004

KIA

TAB 51_ PI1802_ A

QUESTIONS AND ANSWERS

ENGINE CONTROL UNIT (ECU) SOFTWARE UPDATE
PRODUCT IMPROVEMENT CAMPAIGN – PI1802

July 25, 2018

Q1. What sort of campaign is Kia conducting?

A1. Kia Motors America, Inc. is conducting a Product Improvement Campaign to update the software for the Engine Control Unit (ECU) to protect the engine from excessive connecting rod bearing damage.

Q2. What vehicles are affected by this campaign?

A2. All 2015-2018 MY Sorento vehicles equipped with 2.4L Gasoline Direct Injection (GDI) and 2.0L Turbocharged GDI (T-GDI) engines;

All 2014-2018 MY Sportage vehicles equipped with 2.4L Gasoline Direct Injection (GDI) and 2.0L Turbocharged GDI (T-GDI) engines;

Some 2014 MY Optima vehicles equipped with 2.4L Gasoline Direct Injection (GDI) engines produced at KMC from August 29, 2013 to April 25, 2014; and

All 2015-2018 MY Optima vehicles equipped with 2.4L Gasoline Direct Injection (GDI) and 2.0L Turbocharged GDI (T-GDI) engines.

Q3. Why is Kia conducting a Product Improvement Campaign?

A3. Kia recently developed Knock Sensor Detection System (KSDS) that detects vibrations indicating the onset of excessive connecting rod bearing wear. The KSDS is designed to alert the driver at an early stage of bearing wear before the occurrence of severe engine damage, including engine failure.

Q4. Can you describe the Product Improvement Campaign and fix?

*A4. Kia has instructed its Kia dealers to perform the software update on the Engine Control Unit ("ECU") to protect the engine from excessive connecting rod bearing damage. Kia is also providing **lifetime engine warranty coverage** for this issue only (DTC P1326), to both new and used vehicle owners of the affected vehicles identified above, for engine long block assembly repairs needed due to resulting bearing damage upon completion of the Product Improvement Campaign.*

A5. How will the driver know that the Knock Sensor Detection System (KSDS) has detected vibrations indicating the onset of excessive connecting rod bearing wear?

A5. The Malfunction Indicator Lamp (MIL)  *will blink continuously, and the vehicle will be placed in a reduced power and acceleration mode referred to as "Limp Home Mode". The engine RPMs will be limited to approximately 1800-2000 RPM. As a result, the maximum vehicle speed will be limited to approximately 65mph or less depending on vehicle loading and road conditions.*

Q6. Have there been any deaths or injuries as a result of this issue?

A6. No

Q7. Will this cost vehicle owners any money?

A7. No. It will not cost the customer any money to have the Product Improvement Campaign performed.

Q8. How long will the repair take?

A8. The time it takes to perform the repair can vary depending upon the dealer's work schedule, therefore, an appointment is recommended.

Q9. How will owners of the affected vehicles be notified?

A9. Kia will be notifying owners of the 2015MY Sorento vehicles by first-class mail beginning on July 26, 2018. The owners of the remaining affected vehicles will also be notified by first-class mail in the coming months until all owners have been notified.

Q10. Where were the vehicles produced?

A10. The affected vehicles were produced at several Kia assembly plants.

Q11. How many vehicles are included?

*A11. Approximately **1,059,479** vehicles are included in this campaign.*

Q12. Are there any restrictions on an owner's eligibility?

A12. No.

Q13. If a customer has an immediate question, where can they get further information?

A13. They can contact their local Kia dealership or call Kia's Consumer Assistance Center at 1-800-333-4542 (Monday through Friday, 5AM to 6PM, Pacific Standard Time), or contact us via the Owner's Section of www.kia.com.

PE19-004

KIA

TAB 52_TSB_PI180 _R2

FINAL

	GROUP	MODEL
	Product Improvement	**2011-2014MY Optima (QF/TF) 2012-2014MY Sorento (XMa) 2011-2013MY Sportage (SL)**
	NUMBER	DATE
	1803 (Rev 2, 05/16/2019)	**November 2018**

PRODUCT IMPROVEMENT CAMPAIGN

SUBJECT: KNOCK SENSOR DETECTION SYSTEM - ECU LOGIC IMPROVEMENT (PI1803)

★ NOTICE

This bulletin has been revised to include additional information. New/revised sections of this bulletin are indicated by a black bar in the margin area.

This bulletin provides information related to a software update to the Engine Control Unit (ECU) to install the Knock Sensor Detection System (KSDS) in order to protect the engine from excessive connecting rod bearing damage. This update is for:

- All 2011-2013 MY Optima (QF/TF) vehicles equipped with the 2.4L Gasoline Direct Injection (GDI) and 2.0L Turbocharged GDI (T-GDI) engines produced from August 12, 2010 through September 27, 2013;
- All 2014 MY Optima (QF) vehicles equipped with the 2.4L Gasoline Direct Injection (GDI) and 2.0L Turbocharged GDI (T-GDI) engines produced at KMMG from August 28, 2013 through May 15, 2014;
- All 2012-2014 MY Sorento vehicles equipped with the 2.4L Gasoline Direct Injection (GDI) engines produced from April 19, 2011 through February 10, 2014; and
- All 2011-2013 MY Sportage vehicles equipped with the 2.0L Turbo Gasoline Direct Injection (T-GDI) engines produced from December 30, 2010 through August 30, 2013.

The KSDS detects vibrations indicating the onset of excessive connecting rod bearing wear. It is designed to alert the driver at an early stage of bearing wear before the occurrence of severe engine damage, including engine failure. If vibrations caused by bearing wear start to occur, the Malfunction Indicator Lamp (MIL) will blink continuously, and the vehicle will be placed in Limp Home Mode. This will reduce further damage to the engine and ensure that the vehicle occupants are not exposed to the risk of a more severe engine failure. At that time, Diagnostic Trouble Code ("DTC") P1326, specific to the KSDS, will be recorded in the ECU. The vehicle can continue to be operated for a limited time in Limp Home Mode, but it will accelerate slowly and have a reduced maximum speed. Also, engine RPMs will be limited to approximately 1800-2000 RPM.

Kia is requesting the completion of this Product Improvement Campaign on all affected vehicles. Before conducting the procedure, verify the vehicle is included in the list of affected VINs. Also, please have your KDS connected to the internet regularly to get the latest software updates available.

File Under: <Product Improvement>

Circulate To: ☒ General Manager ☒ Service Manager ☒ Parts Manager ☒ Service Advisors ☒ Technicians ☒ Body Shop Manager ☐ Fleet Repair

SUBJECT: KNOCK SENSOR DETECTION SYSTEM – ECU LOGIC IMPROVEMENT (PI1803)

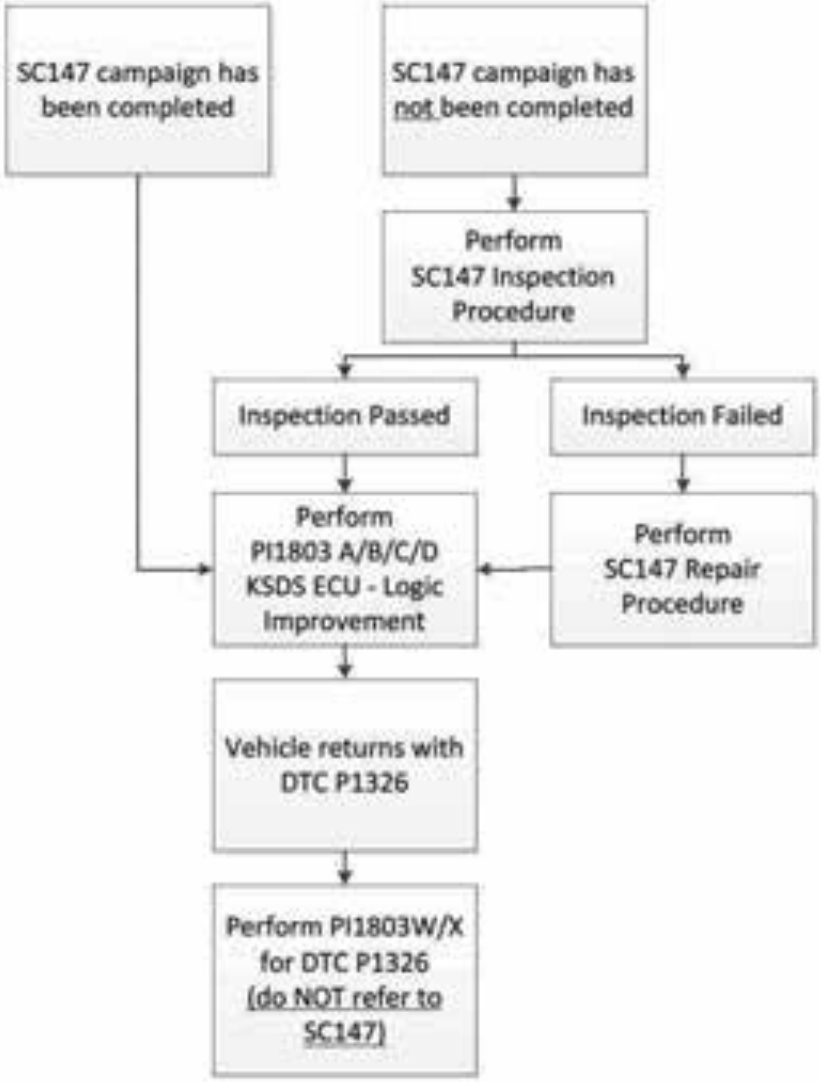
★ NOTICE

Prior to conducting the procedure described in this bulletin, please make certain the SC147 inspection/repair procedure has been completed on the affected vehicles. If the SC147 inspection/repair procedure has not been completed, please complete the SC147 inspection/repair procedure BEFORE you perform the software update requested in this bulletin.

★ NOTICE

To assure complete customer satisfaction, always remember to refer to WebDCS Warranty Coverage (validation) Inquiry Screen (Service → Warranty Coverage → Warranty Coverage Inquiry) for a list of any additional campaigns that may need to be performed on the vehicle before returning it to the customer.

SC147 → PI1803 Flow Chart



SUBJECT: KNOCK SENSOR DETECTION SYSTEM – ECU LOGIC IMPROVEMENT (PI1803)

ECU Upgrade Procedure:

To correct this condition, the ECU should be reprogrammed using the KDS download, as described in this bulletin.

Upgrade Event Name
382. XMA THETA 2.4GDI Knock Sensor Detection System(KSDS) ECU UPGRADE (12~14MY)
383 TF THETA 2.0/2.4 Knock Sensor Detection System(KSDS) ECU UPGRADE (11~13MY)
384. QF THETA 2.0/2.4 Knock Sensor Detection System(KSDS) ECU UPGRADE (12~14MY)
385. SL THETA 2.0T-GDI Knock Sensor Detection System(KSDS) ECU UPGRADE (11~13MY)

★ NOTICE

- A fully charged battery is necessary before ECU upgrade can take place. It is recommended that the Midtronics GR8-1299 system be used in ECU mode during charging. DO NOT connect any other battery charger to the vehicle during ECU upgrade.
- All ECU upgrades must be done with the ignition key in the 'ON' position.
- Be careful not to disconnect the VCI-II connected to the vehicle during the ECU upgrade procedure.
- DO NOT start the engine during ECU upgrade.
- DO NOT turn the ignition key 'OFF' or interrupt the power supply during ECU upgrade.
- When the ECU upgrade is completed, turn the ignition 'OFF' and wait 10 seconds before starting the engine.
- ONLY use approved ECU upgrade software designated for the correct model, year.

⚠ CAUTION

Before attempting an ECU upgrade on any Kia model, make sure to first determine whether the particular model is equipped with an immobilizer security system. Failure to follow proper procedures may cause the PCM to become inoperative after the upgrade and any claims associated with this repair may be subject to chargeback.

★ NOTICE

For Optima models included in this TSB:
VINs that start with 5XX are designated Optima (QF) and produced in the United States. VINs that start with KNA are designated Optima (TF) are produced in South Korea.

SUBJECT: KNOCK SENSOR DETECTION SYSTEM – ECU LOGIC IMPROVEMENT (PI1803)

ROM ID INFORMATION TABLE:

Upgrade Event #382 (XMa), #383 (TF), #384 (QF), #385 (SL)

Model	Engine	IMMO	ECU P/No.	ROM ID	
				Previous	New
12MY Scr. (XMa)	2.4	Yes	39113-2G770 39113-2G775	2WD_XCC4RB3A 2WD_XCC4RB3B 2WD_XCC4RB3C 2WD_XCC4RB3D 2WD_XCC4RB3E 2WD_XCC4RB3F	2WD_XCC4RB3K
			39114-2G770	4WD_XCC4RB3A 2WD_XCC4RB3B 4WD_XCC4RB3C 4WD_XCC4RB3D 4WD_XCC4RB3E 4WD_XCC4RB3F	4WD_XCC4RB3L
		No	39113-2G760 39113-2G765	2WD_XCC4MB3A 4WD_XCC4MB3B 2WD_XCC4MB3C 2WD_XCC4MB3D 2WD_XCC4MB3E 2WD_XCC4MB3F	2WD_XCC4MB3K
			39114-2G760	4WD_XCC4MB3A 4WD_XCC4MB3C 4WD_XCC4MB3D 4WD_XCC4MB3E 4WD_XCC4MB3F	4WD_XCC4MB3L
13MY Scr. (XMa)	2.4	Yes	39113-2G771	2WD_XDC4RE0A 2WD_XDC4REAA 2WD_XDC4REAB 2WD_XDC4REAC 2WD_XDC4REAE 2WD_XDC4REAG	2WD_XDC4REAK
				2WD_XDC4READ 2WD_XDC4REAF 2WD_XDC4REAH	2WD_XDC4REAM
			39114-2G771	4WD_XDC4RE0A 4WD_XDC4REAA 4WD_XDC4REAB 4WD_XDC4REAC 4WD_XDC4REAE 4WD_XDC4REAG	4WD_XDC4REAL
				4WD_XDC4READ 4WD_XDC4REAF 4WD_XDC4REAH	4WD_XDC4REAN
		No	39113-2G761	2WD_XDC4ME0A 2WD_XDC4MEAA 2WD_XDC4MEAB 2WD_XDC4MEAC 2WD_XDC4MEAE 2WD_XDC4MEAG	2WD_XDC4MEAK
				2WD_XDC4MEAD 2WD_XDC4MEAF 2WD_XDC4MEAH	2WD_XDC4MEAM
			39114-2G761	4WD_XDC4ME0A 4WD_XDC4MEAA 4WD_XDC4MEAB 4WD_XDC4MEAC 4WD_XDC4MEAE 4WD_XDC4MEAG	4WD_XDC4MEAL
				4WD_XDC4MEAD 4WD_XDC4MEAF 4WD_XDC4MEAH	4WD_XDC4MEAN

SUBJECT: KNOCK SENSOR DETECTION SYSTEM – ECU LOGIC IMPROVEMENT (PI1803)

Model	Engine	IMMO	ECU P/No.	ROM ID	
				Previous	New
14MY Sor. (XMa)	2.4	Yes	39113-2GBK5 39114-2GBK5	2WD_FDC4RF3A 2WD_FDC4RG0A 2WD_FDC4RG0B 2WD_FEC4RG0C	2WD_FEC4RG1K
				2WD_FEC4RH2A 2WD_FEC4RH2B	2WD_FEC4RH2K
			39113-2GBL5	4WD_FDC4RF3A 4WD_FDC4RG0A 4WD_FDC4RG0B 4WD_FEC4RG0C	4WD_FEC4RG1L
				4WD_FEC4RH2A 4WD_FEC4RH2B	4WD_FEC4RH2L
		No	39113-2GBK0 39114-2GBK0	2WD_FDC4MF3A 2WD_FDC4MG0A 2WD_FDC4MG0B 2WD_FEC4MG0C	2WD_FEC4MG1K
				2WD_FEC4MH2A 2WD_FEC4MH2B	2WD_FEC4MH2K
			39113-2GBL0	4WD_FDC4MF3A 4WD_FDC4MG0A 4WD_FDC4MG0B 4WD_FEC4MG0C	4WD_FEC4MG1L
				4WD_FEC4MH2A 4WD_FEC4MH2B	4WD_FEC4MH2L
11MY Opt. (TF)	2.4 (ULEV)	Yes	39111-2G870 39112-2G870	TBC4R85A TBC4R86A TBC4R86B TBC4R86D	TBC4RB3K
			39111-2G871 39112-2G871	TBC4R86C TBC4R88A TBC4R88B TBC4RB3A TBC4RB3B TBC4RB3C	TBC4RB3L
		No	39111-2G860 39112-2G860	TBC4M85A TBC4M86A TBC4M86B TBC4M86D	TBC4MB3K
			39111-2G861 39112-2G861	TBC4M86C TBC4M88A TBC4M88B TBC4MB3A TBC4MB3B TBC4MB3C	TBC4MB3L

SUBJECT: KNOCK SENSOR DETECTION SYSTEM – ECU LOGIC IMPROVEMENT (PI1803)

Model	Engine	IMMO	ECU P/No.	ROM ID	
				Previous	New
11MY Opt. (TF)	2.4 (SULEV)	Yes	39111-2G875	TBS4R85A TBS4R86A TBS4R86B TBS4RF3E TBS4RF3G	TBS4RF3K
			3911102G876	TBS4R86C TBS4R88A TBS4R88B TBS4RB3A TBS4RB3B TBS4RF3F TBS4RF3H	TBS4RF3L
		No	39111-2G865	TBS4M85A TBS4M86A TBS4M86B TBS4MF3E TBS4MF3G	TBS4MF3K
			39111-2G866	TBS4M86C TBS4M88A TBS4M88B TBS4MB3A TBS4MB3B TBS4MF3F TBS4MF3H	TBS4MF3L
12MY Opt. (TF)	2.4 (ULEV)	Yes	39111-2G873 39112-2G873	TCC4RB3K TCC4REAK TCC4REAL TCC4REAM	TCC4REA5
		No	39111-2G863 39112-2G863	TCC4MB3K TCC4MEAK TCC4MEAL TCC4MEAM	TCC4MEA5
	2.4 (SULEV)	Yes	39111-2G878	TCS4RB3K TCS4REAK TCS4REAL TCS4REAM	TCS4REA5
		No	39111-2G868	TCS4MB3K TCS4MEAK TCS4MEAL TCS4MEAM	TCS4MEA5
13MY Opt. (TF)	2.4 (ULEV)	Yes	39111-2G902 39112-2G902	TDC4REAK TDC4RF0K TDC4RF3K TDC4RG1K TDC4RG1L TDC4RG1M	TDC4RG15
		No	39111-2G900 39112-2G900	TDC4MEAK TDC4MF0K TDC4MF3K TDC4MG1K TDC4MG1L TDC4MG1M	TDC4MG15

SUBJECT: KNOCK SENSOR DETECTION SYSTEM – ECU LOGIC IMPROVEMENT (PI1803)

Model	Engine	IMMO	ECU P/No.	ROM ID	
				Previous	New
13MY Opt. (TF)	2.4 (SULEV)	Yes	39111-2G903	TDS4REAK TDS4RF0K TDS4RF3K TDS4RG1K TDS4RG1L TDS4RG1M	TDS4RG15
		No	39111-2G901	TDS4MEAK TDS4MF0K TDS4MF3K TDS4MG1K TDS4MG1L TDS4MG1M	TDS4MG15
11-13MY Opt. (TF)	2.0T (ULEV)	Yes	39111-2G690 39111-2G892 39111-2G894	TBC0R95C TBC0R96A TBC0R97A TBC0R97B TBC0RB3A TBC0RC0A TDC0RF3L TCC0RC0K TCC0RC0L TCC0RC0M TDC0REAK TDC0RE5K TDC0RF3K TBC0R91A TBC0R92A TBC0R93A TBC0R94A TBC0R95A TBC0R95B	TDC0RF35
		No	39111-2G880 39111-2G882 39111-2G884	TBC0M95C TBC0M96A TBC0M97A TBC0M97B TBC0MB3A TBC0MC0A TDC0MF3L TCC0MC0L TCC0MC0K TCC0MC0M TDC0MEAK TDC0ME5K TDC0MF3K TBC0M91A TBC0M92A TBC0M93A TBC0M94A TBC0M95A TBC0M95B	TDC0MF35

SUBJECT: KNOCK SENSOR DETECTION SYSTEM – ECU LOGIC IMPROVEMENT (PI1803)

13MY Opt. (TF)	2.0T (ULEV)	Yes	39111-2G895	TDC0RG1K TDC0RG1L	TDC0RG15
		No	39111-2G885	TDC0MG1K TDC0MG1L	TDC0MG15
12MY Opt. (QF)	2.4 (ULEV)	Yes	39111-2G872 39112-2G872	TCC4RB3A TCC4REAA TCC4REAB TCC4REAC	TCC4REA1
		No	39111-2G862 39112-2G862	TCC4MB3A TCC4MEAA TCC4MEAB TCC4MEAC	TCC4MEA1
	2.4 (SULEV)	Yes	39111-2G877	TCS4RB3A TCS4REAA TCS4REAB TCS4REAC	TCS4REA1
		No	39111-2G867	TCS4MB3A TCS4MEAA TCS4MEAB TCS4MEAC	TCS4MEA1

SUBJECT: KNOCK SENSOR DETECTION SYSTEM – ECU LOGIC IMPROVEMENT (PI1803)

Model	Engine	IMMO	ECU P/No.	ROM ID	
				Previous	New
13MY Opt. (QF)	2.4 (ULEV)	Yes	39111-2G874 39112-2G874	TDC4REAA TDC4RF0A TDC4RF3A TDC4RF3B TDC4RF3C	TDC4RF31
		No	39111-2G864 39112-2G864	TDC4MEAA TDC4MF0A TDC4MF3A TDC4MF3B TDC4MF3C	TDC4MF31
	2.4 (SULEV)	Yes	39111-2G879	TDS4REAA TDS4RF0A TDS4RF3A TDS4RF3B TDS4RF3C	TDS4RF31
		No	39111-2G869	TDS4MEAA TDS4MF0A TDS4MF3A TDS4MF3B TDS4MF3C	TDS4MF31
14MY Opt. (QF)	2.4 (ULEV)	Yes	39108-2GBJ0 39118-2GBJ0	TEC4RH2A TEC4RH2B	TEC4RH21
		No	39108-2GBH0 39118-2GBH0	TEC4MH2A TEC4MH2B	TEC4MH21
	2.4 (SULEV)	Yes	39108-2GBJ5	TES4RH2A TES4RH2B	TES4RH21
		No	39108-2GBH5	TES4MH2A TES4MH2B	TES4MH21
12-13MY Opt. (QF)	2.0T (ULEV)	Yes	39111-2G891 39111-2G893	TCC0RC0A TCC0RC0B TCC0RC0C TDC0RF3B TDC0RE3A TDC0RE5A TDC0REAA TDC0RF3A	TDC0RF31
		No	39111-2G881 39111-2G883	TCC0MC0A TCC0MC0B TCC0MC0C TDC0MF3B TDC0ME3A TDC0ME5A TDC0MEAA TDC0MF3A	TDC0MF31
		Yes	39111-2G895	TDC0RG1A TDC0RG1B	TDC0RG11
		No	39111-2G885	TDC0MG1A TDC0MG1B	TDC0MG11
14MY Opt. (QF)	2.0T (ULEV)	Yes	39108-2GBK5	TEC0RH2A TEC0RH2B	TEC0RH21
		No	39108-2GBK0	TEC0MH2A TEC0MH2B	TEC0MH21

SUBJECT: KNOCK SENSOR DETECTION SYSTEM – ECU LOGIC IMPROVEMENT (PI1803)

Model	Engine	IMMO	ECU P/No.	ROM ID	
				Previous	New
11-13MY Spo. (SL)	2.0T (ULEV)	Yes	39113-2G870 39114-2G870 39113-2G871 39114-2G871 39113-2G872 39114-2G872	SCC0RB1A SCC0RB3A SCC0RC0A SDC0RF3B SCC0RC0B SDC0RE3A SDC0RE5A SDC0REAA SDC0RF3A	SDC0RF3K
		No	39113-2G860 39114-2G860 39113-2G861 39114-2G861 39113-2G862 39114-2G862	SCC0MB1A SCC0MB3A SCC0MC0A SDC0MF3B SCC0MC0B SDC0ME3A SDC0ME5A SDC0MEAA SDC0MF3A	SDC0MF3K
13MY Spo. (SL)	2.0T (ULEV)	Yes	39113-2G873 39114-2G873	SDC0RG1A SDC0RG1B	SDC0RG1K
		No	39113-2G863 39114-2G863	SDC0MG1A SDC0MG1B	SDC0MG1K

To verify the vehicle is affected, be sure to check the Calibration Identification of the vehicle's ECM ROM ID and reference the Information Table as necessary.

★ NOTICE

Prior to performing the ECU upgrade, be sure to check that the KDS is fully charged.

1. Connect the VCI-II to the OBD-II connector, located under the driver's side of the instrument panel.



★ NOTICE

The ECU upgrade function on KDS operates wirelessly. It is not necessary to perform the upgrade via USB cable.

2. With the ignition ON, turn ON the KDS tablet. Select **KDS** from the home screen.



SUBJECT: KNOCK SENSOR DETECTION SYSTEM – ECU LOGIC IMPROVEMENT (PI1803)

3. Confirm communication with VCI (A) and then configure the vehicle (B) using the **AUTO VIN** (C) feature.



4. Select **ECU Upgrade**.



5. The KDS will check the server for recently uploaded Events and then automatically download **Upgrade Event #382 (XMa), #383 (TF), #384 (QF), or #385 (SL).**

★ NOTICE

The vehicle must be identified in Vehicle Selection to download an Event for that vehicle.



KDS screenshot shown above is for demonstration purposes only. Events shown in screenshot are not applicable to this bulletin.

6. Select **Auto Mode**.

★ NOTICE

Do NOT attempt to perform a Manual Mode upgrade <u>UNLESS Auto Mode fails</u>. Always follow the instructions given on the KDS in either Auto or Manual mode.



7. Select the **ENGINE** system under the System selection menu.

   Touch **ID Check** (D) and confirm that the latest update is available.

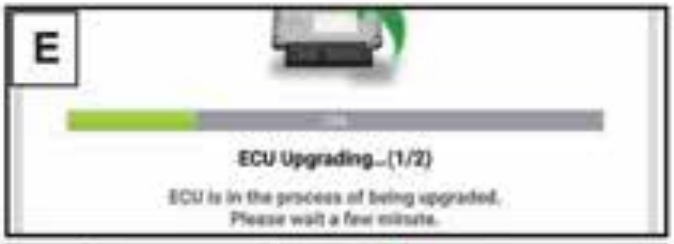
   Select **Upgrade Event #382 (XMa), #383 (TF), #384 (QF), or #385 (SL)** and select **Upgrade** to continue.



8. The ECU upgrade will begin and the progress of the upgrade will appear on the bar graph. Upgrade part (1/2) (E) will download the upgrade event to the VCI-II. Upgrade part (2/2) (F) will upgrade the ECU.

★ NOTICE

Do not touch the system buttons (like 'Back', 'Home', 'etc.') while performing ECU Upgrade.





9. If a "Communication Fail" screen appears, verify that the VCI-II and KDS are communicating properly. Touch **OK** and restart the procedure from step 4.

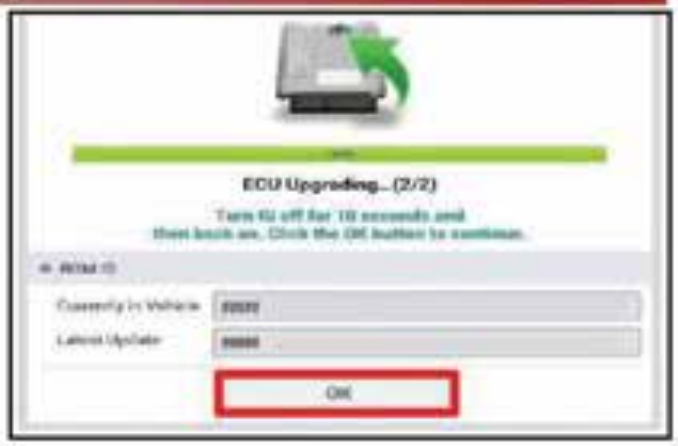
★ NOTICE

If an error notice continues to appear or if the upgrade cannot be performed, DO NOT disconnect the KDS/VCI-II. Contact GIT America Help Desk at (888) 542-4371 or Techline.

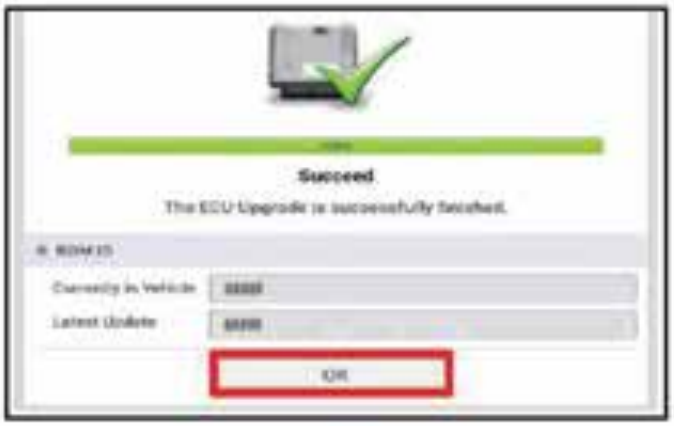


SUBJECT: KNOCK SENSOR DETECTION SYSTEM – ECU LOGIC IMPROVEMENT (PI1803)

10. When instructed on the KDS, turn the ignition **OFF** for ten (10) seconds then back on. Touch **OK** to continue.



11. Once the upgrade is complete, touch **OK** to finalize the procedure.



12. When prompted, select **YES** to check for Diagnostic Trouble Codes (DTC) and erase any DTCs stored such as EPS, ESC, and TPMS that may have been set during the upgrade.



13. Start the engine to confirm proper operation of the vehicle.

SUBJECT: KNOCK SENSOR DETECTION SYSTEM – ECU LOGIC IMPROVEMENT (PI1803)

Manual Upgrade Procedure:

*** NOTICE**

The manual upgrade should ONLY be performed if the automatic upgrade fails.

If the automatic upgrade fails, turn the ignition OFF for about 10 seconds then place it back in the ON position to reset the control unit BEFORE performing manual upgrade.

See table below for Manual Mode passwords.

Manual Mode ECU Upgrade Passwords

Model	Menu	Password
XMA	XMA 2.4GDI -IMMO 12MY(2WD) : 39113-2G760/65 [2WD_XCC4MB3A/3B/3C/3D/3E/3F]	1365
	XMA 2.4GDI +IMMO 12MY(2WD) : 39113-2G770/75 [2WD_XCC4RB3A/3B/3C/3D/3E/3F]	1375
	XMA 2.4GDI -IMMO 12MY(4WD) : 39114-2G760 [4WD_XCC4MB3A/3B/3C/3D/3E/3F]	1460
	XMA 2.4GDI +IMMO 12MY(4WD) : 39114-2G770 [4WD_XCC4RB3A/3C/3D/3E/3F]	1470
	XMA 2.4GDI -IMMO 13MY(2WD) : 39113-2G761 [2WD_XDC4ME0A/AA/AB/AC/AE/AG]	1361
	XMA 2.4GDI +IMMO/SMK 13MY(2WD) : 39113-2G771 [2WD_XDC4RE0A/AA/AB/AC/AE/AG]	1371
	XMA 2.4GDI -IMMO 13MY(4WD) : 39114-2G761 [4WD_XDC4ME0A/AA/AB/AC/AE/AG]	1461
	XMA 2.4GDI +IMMO/SMK 13MY(4WD) : 39114-2G771 [4WD_XDC4RE0A/AA/AB/AC/AE/AG]	1471
	XMA 2.4GDI -IMMO 13MY(2WD) : 39113-2G761 [2WD_XDC4MEAD/AF/AH]	1362
	XMA 2.4GDI +IMMO/SMK 13MY(2WD) : 39113-2G771 [2WD_XDC4READ/AF/AH]	1372
	XMA 2.4GDI -IMMO 13MY(4WD) : 39114-2G761 [4WD_XDC4MEAD/AF/AH]	1462
	XMA 2.4GDI +IMMO/SMK 13MY(4WD) : 39114-2G771 [4WD_XDC4READ/AF/AH]	1472
	XMA 2.4GDI -IMMO 14MY(2WD) : 39113/14-2GBK0 [2WD_FDC4MF3A/G0A/G0B/G0C]	1420
	XMA 2.4GDI +IMMO/SMK 14MY(2WD) : 39113/14-2GBK5 [2WD_FDC4RF3A/G0A/G0B/G0C]	1425
	XMA 2.4GDI -IMMO 14MY(4WD) : 39113-2GBL0 [4WD_FDC4MF3A/G0A/G0B/G0C]	1320
	XMA 2.4GDI +IMMO/SMK 14MY(4WD) : 39113-2GBL5 [4WD_FDC4RF3A/G0A/G0B/G0C]	1325
	XMA 2.4GDI -IMMO 14MY(2WD) : 39113/14-2GBK0 [2WD_FEC4MH2A/B]	1421
	XMA 2.4GDI +IMMO/SMK 14MY(2WD) : 39113/14-2GBK5 [2WD_FEC4RH2A/B]	1426
	XMA 2.4GDI -IMMO 14MY(4WD) : 39113-2GBL0 [4WD_FEC4MH2A/B]	1321
	XMA 2.4GDI +IMMO/SMK 14MY(4WD) : 39113-2GBL5 [4WD_FEC4RH2A/B]	1326
TF	TF 2.0T-GDI -IMMO 11MY~13MY (ULEV) : 39111-2G880/82/84	1184
	TF 2.0T-GDI +IMMO/SMK 11MY~13MY (ULEV) : 39111-2G890/92/94	1194
	TF 2.0T-GDI -IMMO 13MY(ULEV) : 39111-2G885	1185
	TF 2.0T-GDI +IMMO/SMK 13MY(ULEV) : 39111-2G895	1195
	TF 2.4GDI -IMMO 11MY(ULEV) : 39111/12-2G860	1260
	TF 2.4GDI +IMMO 11MY(ULEV) : 39111/12-2G870	1270
	TF 2.4GDI -IMMO 11MY(ULEV) : 39111/12-2G861	1261
	TF 2.4GDI +IMMO 11MY(ULEV) : 39111/12-2G871	1271
	TF 2.4GDI -IMMO 11MY(SULEV) : 39111-2G865	1165
	TF 2.4GDI +IMMO 11MY(SULEV) : 39111-2G875	1175
	TF 2.4GDI -IMMO 11MY(SULEV) : 39111-2G866	1166
	TF 2.4GDI +IMMO 11MY(SULEV) : 39111-2G876	1176
	TF 2.4GDI -IMMO 12MY(ULEV) : 39111/12-2G863	1263
	TF 2.4GDI +IMMO 12MY(ULEV) : 39111/12-2G873	1273
	TF 2.4GDI -IMMO 12MY(SULEV) : 39111-2G868	1168
	TF 2.4GDI +IMMO 12MY(SULEV) : 39111-2G878	1178
	TF 2.4GDI -IMMO 13MY(ULEV) : 39111/12-2G900	1200
	TF 2.4GDI +IMMO/SMK 13MY(ULEV) : 39111/12-2G902	1202
	TF 2.4GDI -IMMO 13MY(SULEV) : 39111-2G901	1101
	TF 2.4GDI +IMMO/SMK 13MY(SULEV) : 39111-2G903	1103

SUBJECT: KNOCK SENSOR DETECTION SYSTEM – ECU LOGIC IMPROVEMENT (PI1803)

Model	Menu	Password
QF	QF 2.0T-GDI -IMMO 12~13MY (ULEV) : 39111-2G881/83	1183
	QF 2.0T-GDI +IMMO/SMK 12~13MY (ULEV) : 39111-2G891/93	1193
	QF 2.0T-GDI -IMMO 13MY(ULEV) : 39111-2G885	1185
	QF 2.0T-GDI +IMMO/SMK 13MY(ULEV) : 39111-2G895	1195
	QF 2.0T-GDI -IMMO 14MY(ULEV) : 39108-2GBK0	0820
	QF 2.0T-GDI +IMMO/SMK 14MY(ULEV) : 39108-2GBK5	0825
	QF 2.4GDI -IMMO 12MY(ULEV) : 39111/12-2G862	1262
	QF 2.4GDI +IMMO 12MY(ULEV) : 39111/12-2G872	1272
	QF 2.4GDI -IMMO 12MY(SULEV) : 39111-2G867	1167
	QF 2.4GDI +IMMO 12MY(SULEV) : 39111-2G877	1177
	QF 2.4GDI -IMMO 13MY(ULEV) : 39111/12-2G864	1264
	QF 2.4GDI +IMMO/SMK 13MY(ULEV) : 39111/12-2G874	1274
	QF 2.4GDI -IMMO 13MY(SULEV) : 39111-2G869	1169
	QF 2.4GDI +IMMO/SMK 13MY(SULEV) : 39111-2G879	1179
	QF 2.4GDI -IMMO 14MY(ULEV) : 39108/18-2GBH0	1820
	QF 2.4GDI +IMMO/SMK 14MY(ULEV) : 39108/18-2GBJ0	1821
	QF 2.4GDI -IMMO 14MY(SULEV) : 39108-2GBH5	0825
	QF 2.4GDI +IMMO/SMK 14MY(SULEV) : 39108-2GBJ5	0826
SL	SL 2.0T-GDI -IMMO 11~13MY (ULEV) : 39113/14-2G860/61/62	1462
	SL 2.0T-GDI +IMMO/SMK 11~13MY (ULEV) : 39113/14-2G870/71/72	1472
	SL 2.0T-GDI -IMMO 13MY(ULEV) : 39113/14-2G863	1463
	SL 2.0T-GDI +IMMO/SMK 13MY(ULEV) : 39113/14-2G873	1473

1. Within the ECU Upgrade screen displayed, select **Manual Mode**.
2. Select the **ENGINE** system under the System selection menu. Select **Upgrade Event #382 (XMa), #383 (TF), #384 (QF), or #385 (SL)** and select **Upgrade** to continue.
3. Select the appropriate control unit part number with reference to the ROM ID Information Table on page 3-8, and select **OK**.
4. Enter the appropriate password from the Manual Mode password table above and select **OK**.
5. The upgrade will begin and the progress of the upgrade will appear on the bar graph.
6. When instructed on the KDS, turn the ignition **OFF** for ten (10) seconds then back on. Touch **OK** to continue.
7. Once the upgrade is complete, touch **OK** to finalize the procedure.
8. When prompted, select **YES** to check for Diagnostic Trouble Codes (DTC) and erase any DTCs stored such as EPS, ESC, and TPMS that may have been set during the upgrade.
9. Start the engine to confirm proper operation of the vehicle.

SUBJECT: KNOCK SENSOR DETECTION SYSTEM – ECU LOGIC IMPROVEMENT (PI1803)

AFFECTED VEHICLE RANGE:

Model	Production Date Range
11-13MY Optima (QF/TF)	August 12, 2010 through September 27, 2013
14MY Optima (QF)	August 28, 2013 through May 15, 2014
12-14MY Sorento (XMa)	April 19, 2011 through February 10, 2014
11-13MY Sportage (SL)	December 30, 2010 through August 30, 2013

WARRANTY INFORMATION (PI1803A/B/C/D):

N Code: N99 C Code: C99

Model	Claim Type	Causal P/N	Qty.	Repair Description	Labor Op Code	Op Time	Replacement P/N	Qty.
TF (11-13MY)	R	39111 2G870	0	(PI1803A/B/C/D) KSDS - ECU Logic Improvement	180133R0	0.3 M/H	N/A	0
QF (12-14MY)	R	39111 2G872	0	(PI1803A/B/C/D) KSDS - ECU Logic Improvement	180A22R0	0.3 M/H	N/A	0
XMa (12-14MY)	R	39113 2G770	0	(PI1803A/B/C/D) KSDS - ECU Logic Improvement	180A21R0	0.3 M/H	N/A	0
SL (11-13MY)	R	39113 2G860	0	(PI1803A/B/C/D) KSDS - ECU Logic Improvement	180134R0	0.3 M/H	N/A	0

*** NOTICE**

VIN inquiry data for this repair is provided for tracking purposes only. Kia retailers should reference PI1803* when accessing the WebDCS system.

PE19-004

KIA

TAB 5 _ PI1802_TSB

	GROUP	MODEL
KIA	**Product Improvement**	**2015MY Sorento (XMa)**
	NUMBER	DATE
	1802	**July 2018**

PRODUCT IMPROVEMENT CAMPAIGN

SUBJECT: KNOCK SENSOR DETECTION SYSTEM - ECU LOGIC IMPROVEMENT (PI1802)

This bulletin provides information related to a software update to the Engine Control Unit (ECU) to install the Knock Sensor Detection System (KSDS) in order to protect the engine from excessive connecting rod bearing damage. This update is for all 2015MY Sorento (XMa) vehicles equipped with 2.4L GDI engines, manufactured from January 3, 2014 through December 11, 2014. The KSDS detects vibrations indicating the onset of excessive connecting rod bearing wear. It is designed to alert the driver at an early stage of bearing wear before the occurrence of severe engine damage, including engine failure. If vibrations caused by bearing wear start to occur, the Malfunction Indicator Lamp (MIL) will blink continuously, and the vehicle will be placed in Limp Home Mode. This will reduce further damage to the engine and ensure that the vehicle occupants are not exposed to the risk of a more severe engine failure. At that time, Diagnostic Trouble Code ("DTC") P1326, specific to the KSDS, will be recorded in the ECU. The vehicle can continue to be operated for a limited time in Limp Home Mode, but it will accelerate slowly and have a reduced maximum speed. Also, engine RPMs will be limited to approximately 1800-2000 RPM.

Kia is requesting the completion of this Product Improvement Campaign on all affected vehicles. Before conducting the procedure, verify the vehicle is included in the list of affected VINs.



Kia Diagnostic System (KDS)

★ NOTICE

To assure complete customer satisfaction, always remember to refer to WebDCS Warranty Coverage (validation) Inquiry Screen (Service → Warranty Coverage → Warranty Coverage Inquiry) for a list of any additional campaigns that may need to be performed on the vehicle before returning it to the customer.

File Under: <Product Improvement>

Circulate To: ☒ General Manager ☒ Service Manager ☒ Parts Manager ☒ Service Advisors ☒ Technicians ☒ Body Shop Manager ☐ Fleet Repair

SUBJECT: KNOCK SENSOR DETECTION SYSTEM – ECU LOGIC IMPROVEMENT (PI1802)

ECU Upgrade Procedure:

To correct this condition, the ECU should be reprogrammed using the KDS download, as described in this bulletin.

Upgrade Event Name
374. XMa Theta 2.4GDI Knock Sensor Detection System (KSDS) ECU Upgrade

* NOTICE

- **A fully charged battery is necessary before ECU upgrade can take place. It is recommended that the Midtronics GR8-1299 system be used in ECU mode during charging. DO NOT connect any other battery charger to the vehicle during ECU upgrade.**
- **All ECU upgrades must be done with the ignition key in the 'ON' position.**
- **Be careful not to disconnect the VCI-II connected to the vehicle during the ECU upgrade procedure.**
- **DO NOT start the engine during ECU upgrade.**
- **DO NOT turn the ignition key 'OFF' or interrupt the power supply during ECU upgrade.**
- **When the ECU upgrade is completed, turn the ignition 'OFF' and wait 10 seconds before starting the engine.**
- **ONLY use approved ECU upgrade software designated for the correct model, year.**

⚠ CAUTION

Before attempting an ECU upgrade on any Kia model, make sure to first determine whether the particular model is equipped with an immobilizer security system. Failure to follow proper procedures may cause the PCM to become inoperative after the upgrade and any claims associated with this repair may be subject to chargeback.

ROM ID INFORMATION TABLE:

Upgrade Event #374

Model	ENG	IMMO	ECU P/No.	ROM ID	
				Previous	New
XMa	2.4GDI	Yes	39113-2GBK6 39113-2GBK7 39113-2GBL6 39113-2GBL7	FFC4RH2A FFC4RHAA FFC4RHAB	FFC4RHAK
		No	39113-2GBK1 39113-2GBK2 39113-2GBL1 39113-2GBL2	FFC4MH2A FFC4MHAA FFC4MHAB	FFC4MHAK

To verify the vehicle is affected, be sure to check the Calibration Identification of the vehicle's ECM ROM ID and reference the Information Table as necessary.

SUBJECT: KNOCK SENSOR DETECTION SYSTEM – ECU LOGIC IMPROVEMENT (PI1802)

★ NOTICE

Prior to performing the ECU upgrade, be sure to check that the KDS is fully charged.

1. Connect the VCI-II to the OBD-II connector, located under the driver's side of the instrument panel.



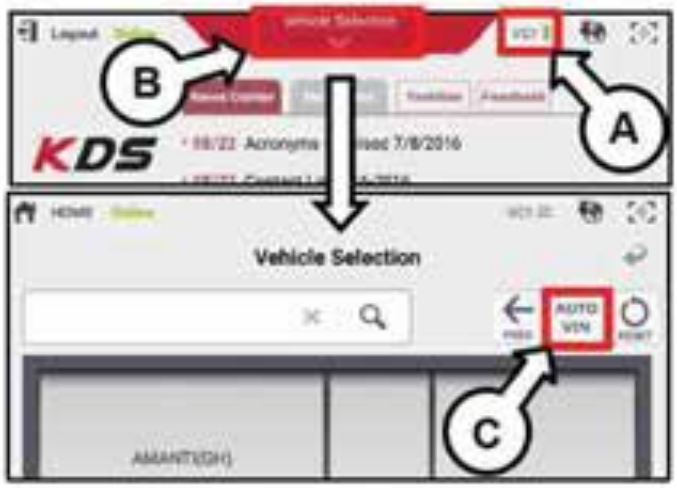
★ NOTICE

The ECU upgrade function on KDS operates wirelessly. It is not necessary to perform the upgrade via USB cable.

2. With the ignition ON, turn ON the KDS tablet. Select **KDS** from the home screen.



3. Confirm communication with VCI (A) and then configure the vehicle (B) using the **AUTO VIN** (C) feature.



4. Select **ECU Upgrade**.



SUBJECT: KNOCK SENSOR DETECTION SYSTEM – ECU LOGIC IMPROVEMENT (PI1802)

5. The KDS will check the server for recently uploaded Events and then automatically download **Upgrade Event #374.**

*** NOTICE**

The vehicle must be identified in Vehicle Selection to download an Event for that vehicle.



KDS screenshot shown above is for demonstration purposes only. Events shown in screenshot are not applicable to this bulletin.

6. Select **Auto Mode**.

*** NOTICE**

Do NOT attempt to perform a Manual Mode upgrade <u>UNLESS Auto Mode fails</u>. Always follow the instructions given on the KDS in either Auto or Manual mode.



7. Select the **ENGINE** system under the System selection menu.

Touch **ID Check** (D) and confirm that the latest update is available.

Select **Upgrade Event #374** and select **Upgrade** to continue.



8. The ECU upgrade will begin and the progress of the upgrade will appear on the bar graph. Upgrade part (1/2) (E) will download the upgrade event to the VCI-II. Upgrade part (2/2) (F) will upgrade the ECU.

*** NOTICE**

Do not touch the system buttons (like 'Back', 'Home', 'etc.') while performing ECU Upgrade.





SUBJECT: KNOCK SENSOR DETECTION SYSTEM – ECU LOGIC IMPROVEMENT (PI1802)

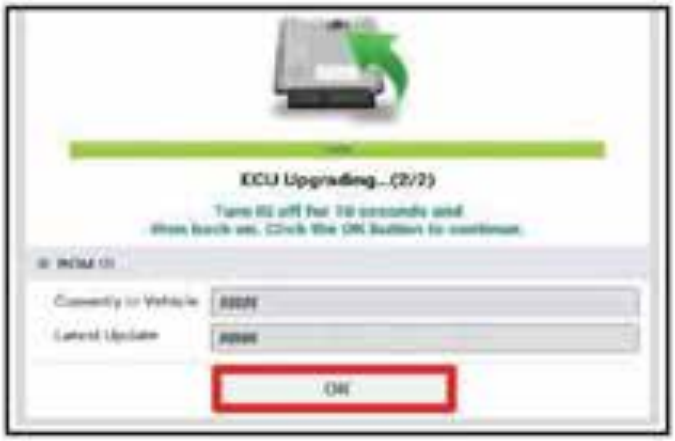
9. If a "Communication Fail" screen appears, verify that the VCI-II and KDS are communicating properly. Touch **OK** and restart the procedure from step 4.



★ NOTICE

If an error notice continues to appear or if the upgrade cannot be performed, DO NOT disconnect the KDS/VCI-II. Contact GIT America Help Desk at (888) 542-4371 or Techline.

10. When instructed on the KDS, turn the ignition **OFF** for ten (10) seconds then back on. Touch **OK** to continue.



11. Once the upgrade is complete, touch **OK** to finalize the procedure.



12. When prompted, select **YES** to check for Diagnostic Trouble Codes (DTC) and erase any DTCs stored such as EPS, ESC, and TPMS that may have been set during the upgrade.



13. Start the engine to confirm proper operation of the vehicle.

SUBJECT: KNOCK SENSOR DETECTION SYSTEM – ECU LOGIC IMPROVEMENT (PI1802)

Manual Upgrade Procedure:

★ NOTICE

The manual upgrade should ONLY be performed if the automatic upgrade fails.

If the automatic upgrade fails, turn the ignition OFF for about 10 seconds then place it back in the ON position to reset the control unit BEFORE performing manual upgrade.

See table below for Manual Mode passwords.

Manual Mode ECU Upgrade Passwords

Menu	Password
XMA 2.4GDI -IMMO : 39113-2GBK1/K2/L1/L2	1322
XMA 2.4GDI +IMMO/SMK : 39113-2GBK6/K7/L6/L7	1327

1. Within the ECU Upgrade screen displayed, select **Manual Mode**.
2. Select the **ENGINE** system under the System selection menu. Select **Upgrade Event #374** and select **Upgrade** to continue.
3. Select the appropriate control unit part number with reference to the ROM ID Information Table on page 2, and select **OK**.
4. Enter the appropriate password from the Manual Mode password table above and select **OK**.
5. The upgrade will begin and the progress of the upgrade will appear on the bar graph.
6. When instructed on the KDS, turn the ignition **OFF** for ten (10) seconds then back on. Touch **OK** to continue.
7. Once the upgrade is complete, touch **OK** to finalize the procedure.
8. When prompted, select **YES** to check for Diagnostic Trouble Codes (DTC) and erase any DTCs stored such as EPS, ESC, and TPMS that may have been set during the upgrade.
9. Start the engine to confirm proper operation of the vehicle.

SUBJECT: KNOCK SENSOR DETECTION SYSTEM – ECU LOGIC IMPROVEMENT (PI1802)

AFFECTED VEHICLE RANGE:

Model	Production Date Range
Sorento (XMa)	January 3, 2014 through December 11, 2014

WARRANTY INFORMATION:

N Code: N99 C Code: C99

Model	Claim Type	Causal P/N	Qty.	Repair Description	Labor Op Code	Op Time	Replacement P/N	Qty.
XMa (15MY)	R	39113 2GBK1	0	(PI1802A) KSDS - ECU Logic Improvement	180A10R0	0.3 M/H	N/A	0

*** NOTICE**

VIN inquiry data for this repair is provided for tracking purposes only. Kia retailers should reference PI1802 when accessing the WebDCS system.

PE19-004

KIA

TAB 54_ PI1802_TSB_R1

	GROUP	MODEL
KIA	**Product Improvement**	**2015MY Sorento (XMa) 2014-2015MY Optima (TF, QF) Sportage (SL)**
	NUMBER	DATE
	1802 (Rev 1, 08/28/2018)	**July 2018**

SUBJECT: # PRODUCT IMPROVEMENT CAMPAIGN

KNOCK SENSOR DETECTION SYSTEM - ECU LOGIC IMPROVEMENT (PI1802)

★ NOTICE

This bulletin has been revised to include additional information. New/revised sections of this bulletin are indicated by a black bar in the margin area.

This bulletin provides information related to a software update to the Engine Control Unit (ECU) to install the Knock Sensor Detection System (KSDS) in order to protect the engine from excessive connecting rod bearing damage. This update is for:

- Some 2014MY Optima (TF) vehicles equipped with 2.4L GDI engines, manufactured at KMC from August 29, 2013 through April 25, 2014;
- All 2015MY Optima (TF/QF) vehicles equipped with 2.4L GDI and 2.0L Turbocharged GDI (T-GDI) engines;
- All 2014-2015MY Sportage (SL) vehicles equipped with 2.4L GDI and 2.0L Turbocharged GDI (T-GDI) engines;
- All 2015MY Sorento (XMa) vehicles equipped with 2.4L GDI engines, manufactured from January 3, 2014 through December 11, 2014.

The KSDS detects vibrations indicating the onset of excessive connecting rod bearing wear. It is designed to alert the driver at an early stage of bearing wear before the occurrence of severe engine damage, including engine failure. If vibrations caused by bearing wear start to occur, the Malfunction Indicator Lamp (MIL) will blink continuously, and the vehicle will be placed in Limp Home Mode. This will reduce further damage to the engine and ensure that the vehicle occupants are not exposed to the risk of a more severe engine failure. At that time, Diagnostic Trouble Code ("DTC") P1326, specific to the KSDS, will be recorded in the ECU. The vehicle can continue to be operated for a limited time in Limp Home Mode, but it will accelerate slowly and have a reduced maximum speed. Also, engine RPMs will be limited to approximately 1800-2000 RPM.

Kia is requesting the completion of this Product Improvement Campaign on all affected vehicles. Before conducting the procedure, verify the vehicle is included in the list of affected VINs.

File Under: <Product Improvement>

Circulate To:	☒ **General Manager**	☒ **Service Manager**	☒ **Parts Manager**
☒ **Service Advisors**	☒ **Technicians**	☒ **Body Shop Manager**	☐ **Fleet Repair**

SUBJECT: KNOCK SENSOR DETECTION SYSTEM – ECU LOGIC IMPROVEMENT (PI1802)

* NOTICE

To assure complete customer satisfaction, always remember to refer to WebDCS Warranty Coverage (validation) Inquiry Screen (Service → Warranty Coverage → Warranty Coverage Inquiry) for a list of any additional campaigns that may need to be performed on the vehicle before returning it to the customer.

ECU Upgrade Procedure:

To correct this condition, the ECU should be reprogrammed using the KDS download, as described in this bulletin.

Upgrade Event Name
374.XMa Theta 2.4GDI Knock Sensor Detection System (KSDS) ECU Upgrade
375.TF Theta 2.0/2.4GDI Knock Sensor Detection System (KSDS) ECU Upgrade
376.SL Theta 2.0/2.4GDI Knock Sensor Detection System (KSDS) ECU Upgrade
377.QF Theta 2.0/2.4GDI Knock Sensor Detection System (KSDS) ECU Upgrade

* NOTICE

- **A fully charged battery is necessary before ECU upgrade can take place. It is recommended that the Midtronics GR8-1299 system be used in ECU mode during charging. DO NOT connect any other battery charger to the vehicle during ECU upgrade.**
- **All ECU upgrades must be done with the ignition key in the 'ON' position.**
- **Be careful not to disconnect the VCI-II connected to the vehicle during the ECU upgrade procedure.**
- **DO NOT start the engine during ECU upgrade.**
- **DO NOT turn the ignition key 'OFF' or interrupt the power supply during ECU upgrade.**
- **When the ECU upgrade is completed, turn the ignition 'OFF' and wait 10 seconds before starting the engine.**
- **ONLY use approved ECU upgrade software designated for the correct model, year.**

⚠ CAUTION

Before attempting an ECU upgrade on any Kia model, make sure to first determine whether the particular model is equipped with an immobilizer security system. Failure to follow proper procedures may cause the PCM to become inoperative after the upgrade and any claims associated with this repair may be subject to chargeback.

* NOTICE

For Optima models included in this TSB:
VINs that start with 5XX are designated Optima (QF) and produced in the United States. VINs that start with KNA are designated Optima (TF) are produced in South Korea.

SUBJECT: KNOCK SENSOR DETECTION SYSTEM – ECU LOGIC IMPROVEMENT (PI1802)

ROM ID INFORMATION TABLE:

Upgrade Event #374, #375, #376, #377

Model	ENG	IMMO	ECU P/No.	ROM ID	
				Previous	New
15MY Sor. (XMa)	2.4 (ULEV)	Yes	39113-2GBK6 39113-2GBK7 39113-2GBL6 39113-2GBL7	FFC4RH2A FFC4RHAA FFC4RHAB	FFC4RHAK
		No	39113-2GBK1 39113-2GBK2 39113-2GBL1 39113-2GBL2	FFC4MH2A FFC4MHAA FFC4MHAB	FFC4MHAK
14MY Opt. (TF)	2.4 (ULEV)	Yes	39108-2GBF0 39118-2GBF0	TEC4RH2K TEC4RH2L	TEC4RH25
		No	39108-2GBE0 39118-2GBE0	TEC4MH2K TEC4MH2L	TEC4MH25
	2.4 (SULEV)	Yes	39108-2GBF5	TES4RH2K TES4RH2L	TES4RH25
		No	39108-2GBE5	TES4MH2K TES4MH2L	TES4MH25
15MY Opt. (TF)	2.4 (ULEV)	Yes	39108-2GBF1	TFC4RH4K TFC4RH4L	TFC4RH45
		No	39108-2GBE1 39118-2GBE1	TFC4MH4K TFC4MH4L	TFC4MH45
	2.4 (SULEV)	No	39108-2GBE6	TFS4MH4K TFS4MH4L	TFS4MH45
14MY Opt. (TF)	2.0T (ULEV)	Yes	39108-2GBG5 39106-2GBG6	TEC0RH2K TEC0RH2L	TEC0RH25
		No	39108-2GBG0 39108-2GBG1	TEC0MH2K TEC0MH2L	TEC0MH25
15MY Opt. (TF)	2.0T (ULEV)	Yes	39108-2GBG7	TFC0RH4K TFC0RH4L	TFC0RH45
14MY Spo. (SL)	2.4 (ULEV)	Yes	39107-2GCD0 39107-2GCE0 39117-2GCD0 39117-2GCE0	SEC4RH2A SEC4RH2B SEC4RH2C SEC4RH2D	SEC4RH2K
		No	39107-2GCD5 39107-2GCE5 39117-2GCD5 39117-2GCE5	SEC4MH2A SEC4MH2B SEC4MH2C SEC4MH2D	SEC4MH2K
	2.4 (SULEV)	Yes	39107-2GCG0	SES4RH2A SES4RH2B SES4RH2C SES4RH2D	SES4RH2K
		No	39107-2GCG5	SES4MH2A SES4MH2B SES4MH2C SES4MH2D	SES4MH2K

SUBJECT: KNOCK SENSOR DETECTION SYSTEM – ECU LOGIC IMPROVEMENT (PI1802)

Continued...

Model	ENG	IMMO	ECU P/No.	ROM ID	
				Previous	New
15MY Spo. (SL)	2.4 (ULEV)	Yes	39107-2GCD1 39107-2GCD2 39107-2GCE1 39107-2GCE2 39117-2GCD1 39117-2GCE1	SFC4RH4A SFC4RH4B	SFC4RH4K
		No	39107-2GCD6 39107-2GCD7 39107-2GCE6 39107-2GCE7 39117-2GCD6 39117-2GCE6	SFC4MH4A SFC4MH4B	SFC4MH4K
	2.4 (SULEV)	Yes	39107-2GCG1 39107-2GCG2	SFS4RH4A SFS4RH4B	SFS4RH4K
		No	39107-2GCG6 39107-2GCG7	SFS4MH4A SFS4MH4B	SFS4MH4K
14MY Spo. (SL)	2.0T (ULEV)	Yes	39107-2GCC0	SEC0RH2A	SEC0RH2K
		No	39107-2GCC5	SEC0MH2A	SEC0MH2K
	2.0T (ULEV)	Yes	39107-2GCC1 39107-2GCC2	SFC0RH4A	SFC0RH4K
		No	39107-2GCC6 39107-2GCC7	SFC0MH4A	SFC0MH4K
15MY Opt. (QF)	2.4 (ULEV)	Yes	39108-2GBJ1 39108-2GBJ2 39118-2GBJ1	TFC4RH4A	TFC4RH41
		No	39108-2GBH1 39108-2GBH2 39118-2GBH1	TFC4MH4A TFC4MH4B	TFC4MH41
	2.4 (SULEV)	Yes	39108-2GBJ6 39108-2GBJ7	TFS4RH4A TFS4RH4B	TFS4RH41
		No	39108-2GBH6 39108-2GBH7	TFS4MH4A TFS4MH4B	TFS4MH41
15MY Opt. (QF)	2.0T (ULEV)	Yes	39108-2GBK7 39108-2GBK8	TFC0RH4A TFC0RH4B	TFC0RH41
		No	39108-2GBK2 39108-2GBK3	TFC0MH4A TFC0MH4B	TFC0MH41

To verify the vehicle is affected, be sure to check the Calibration Identification of the vehicle's ECM ROM ID and reference the Information Table as necessary.

★ NOTICE

Prior to performing the ECU upgrade, be sure to check that the KDS is fully charged.

SUBJECT: KNOCK SENSOR DETECTION SYSTEM – ECU LOGIC IMPROVEMENT (PI1802)

1. Connect the VCI-II to the OBD-II connector, located under the driver's side of the instrument panel.



★ NOTICE

The ECU upgrade function on KDS operates wirelessly. It is not necessary to perform the upgrade via USB cable.

2. With the ignition ON, turn ON the KDS tablet. Select **KDS** from the home screen.



3. Confirm communication with VCI (A) and then configure the vehicle (B) using the **AUTO VIN** (C) feature.



4. Select **ECU Upgrade**.



SUBJECT: KNOCK SENSOR DETECTION SYSTEM – ECU LOGIC IMPROVEMENT (PI1802)

5. The KDS will check the server for recently uploaded Events and then automatically download **Upgrade Event #374 (XMa), #375 (TF), #376 (SL), or #377 (QF).**

★ NOTICE

The vehicle must be identified in Vehicle Selection to download an Event for that vehicle.



KDS screenshot shown above is for demonstration purposes only. Events shown in screenshot are not applicable to this bulletin.

6. Select **Auto Mode**.

★ NOTICE

Do NOT attempt to perform a Manual Mode upgrade <u>UNLESS Auto Mode fails</u>. Always follow the instructions given on the KDS in either Auto or Manual mode.



7. Select the **ENGINE** system under the System selection menu.

Touch **ID Check** (D) and confirm that the latest update is available.

Select **Upgrade Event #374 (XMa), #375 (TF), #376 (SL), or #377 (QF)** and select **Upgrade** to continue.



8. The ECU upgrade will begin and the progress of the upgrade will appear on the bar graph. Upgrade part (1/2) (E) will download the upgrade event to the VCI-II. Upgrade part (2/2) (F) will upgrade the ECU.

★ NOTICE

Do not touch the system buttons (like 'Back', 'Home', 'etc.') while performing ECU Upgrade.





SUBJECT: KNOCK SENSOR DETECTION SYSTEM – ECU LOGIC IMPROVEMENT (PI1802)

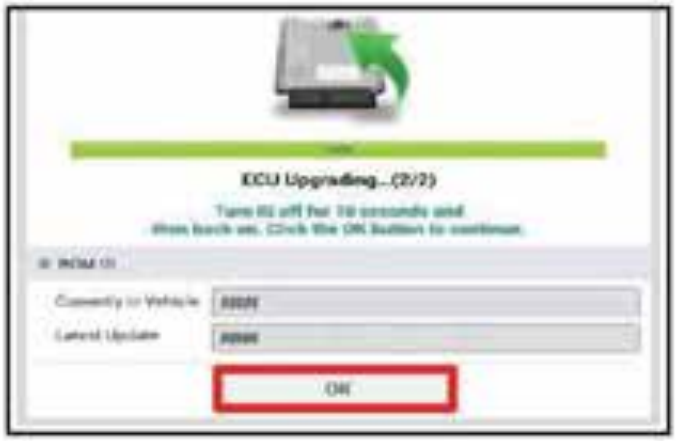
9. If a "Communication Fail" screen appears, verify that the VCI-II and KDS are communicating properly. Touch **OK** and restart the procedure from step 4.



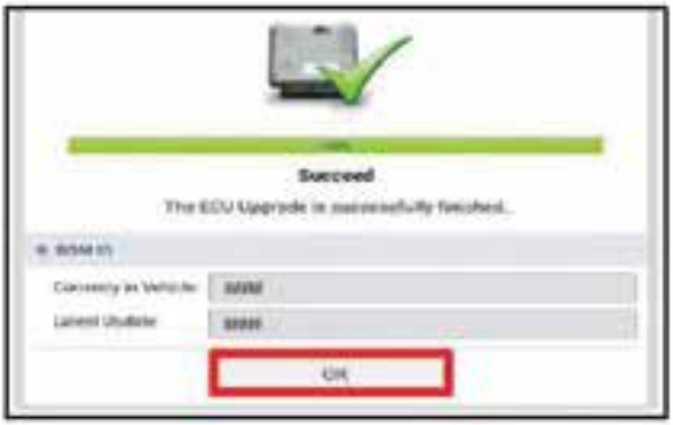
★ NOTICE

If an error notice continues to appear or if the upgrade cannot be performed, DO NOT disconnect the KDS/VCI-II. Contact GIT America Help Desk at (888) 542-4371 or Techline.

10. When instructed on the KDS, turn the ignition **OFF** for ten (10) seconds then back on. Touch **OK** to continue.



11. Once the upgrade is complete, touch **OK** to finalize the procedure.



12. When prompted, select **YES** to check for Diagnostic Trouble Codes (DTC) and erase any DTCs stored such as EPS, ESC, and TPMS that may have been set during the upgrade.



13. Start the engine to confirm proper operation of the vehicle.

SUBJECT: KNOCK SENSOR DETECTION SYSTEM – ECU LOGIC IMPROVEMENT (PI1802)

Manual Upgrade Procedure:

★ NOTICE

The manual upgrade should ONLY be performed if the automatic upgrade fails.

If the automatic upgrade fails, turn the ignition OFF for about 10 seconds then place it back in the ON position to reset the control unit BEFORE performing manual upgrade.

See table below for Manual Mode passwords.

Manual Mode ECU Upgrade Passwords

Model	Menu	Password
XMa	XMA 2.4GDI -IMMO : 39113-2GBK1/K2/L1/L2	1322
	XMA 2.4GDI +IMMO/SMK : 39113-2GBK6/K7/L6/L7	1327
TF 2.0T	TF F/L 2.0 TGDI 14MY(ULEV) -IMMO : 39108-2GBG0/G1	8201
	TF F/L 2.0 TGDI 14MY(ULEV) +IMMO/SMK : 39108-2GBG5/G6	8256
	TF F/L 2.0 TGDI 15MY(ULEV) +IMMO/SMK : 39108-2GBG7	0827
TF 2.4	TF F/L 2.4 GDI 14MY(ULEV) -IMMO : 39108/18-2GBE0	1820
	TF F/L 2.4 GDI 14MY(ULEV) +IMMO/SMK : 39108/18-2GBF0	1821
	TF F/L 2.4 GDI 14MY(SULEV) -IMMO : 39108-2GBE5	0828
	TF F/L 2.4 GDI 14MY(SULEV) +IMMO/SMK : 39108-2GBF5	0829
	TF F/L 2.4 GDI 15MY(ULEV) -IMMO : 39108/18-2GBE1	1822
	TF F/L 2.4 GDI 15MY(ULEV) +IMMO/SMK : 39108-2GBF1	0821
	TF F/L 2.4 GDI 15MY(SULEV) -IMMO : 39108-2GBE6	0826
SL 2.0T	SL 2.0 TGDI 14MY(ULEV) -IMMO : 39107-2GCC5	0725
	SL 2.0 TGDI 14MY(ULEV) +IMMO/SMK : 39107-2GCC0	0720
	SL 2.0 TGDI 15MY(ULEV) -IMMO : 39107-2GCC6/C7	7267
	SL 2.0 TGDI 15MY(ULEV) +IMMO/SMK : 39107-2GCC1/C2	7212
SL 2.4	SL 2.4 GDI 14MY(ULEV) -IMMO : 39107/17-2GCD5/E5	7255
	SL 2.4 GDI 14MY(ULEV) +IMMO/SMK : 39107/17-2GCD0/E0	7200
	SL 2.4 GDI 14MY(SULEV) -IMMO : 39107-2GCG5	0726
	SL 2.4 GDI 14MY(SULEV) +IMMO/SMK : 39107-2GCG0	0721
	SL 2.4 GDI 15MY(ULEV) -IMMO : 39107-2GCD6/D7/E6/E7, 39117-2GCD6/E6	7266
	SL 2.4 GDI 15MY(ULEV) +IMMO/SMK : 39107-2GCD1/D2/E1/E2, 39117-2GCD1/E1	7211
	SL 2.4 GDI 15MY(SULEV) -IMMO : 39107-2GCG6/G7	7268
	SL 2.4 GDI 15MY(SULEV) +IMMO/SMK : 39107-2GCG1/G2	7213
QF 2.0T	QF 2.0 TGDI 15MY(ULEV) -IMMO : 39108-2GBK2/K3	0823
	QF 2.0 TGDI 15MY(ULEV) +IMMO/SMK : 39108-2GBK7/K8	0828
QF 2.4	QF 2.4 GDI 15MY(ULEV) -IMMO : 39108-2GBH1/H2, 39118-2GBH1	1821
	QF 2.4 GDI 15MY(ULEV) +IMMO/SMK : 39108-2GBJ1/J2, 39118-2GBJ1	1822
	QF 2.4 GDI 15MY(SULEV) -IMMO : 39108-2GBH6/H7	0827
	QF 2.4 GDI 15MY(SULEV) +IMMO/SMK : 39108-2GBJ6/J7	0829

1. Within the ECU Upgrade screen displayed, select **Manual Mode**.

2. Select the **ENGINE** system under the System selection menu. Select **Upgrade Event #374 (XMa), #375 (TF), #376 (SL), or #377 (QF)** and select **Upgrade** to continue.

3. Select the appropriate control unit part number with reference to the ROM ID Information Table on page 3-4, and select **OK**.

4. Enter the appropriate password from the Manual Mode password table above and select **OK**.

5. The upgrade will begin and the progress of the upgrade will appear on the bar graph.

6. When instructed on the KDS, turn the ignition **OFF** for ten (10) seconds then back on. Touch **OK** to continue.

7. Once the upgrade is complete, touch **OK** to finalize the procedure.

8. When prompted, select **YES** to check for Diagnostic Trouble Codes (DTC) and erase any DTCs stored such as EPS, ESC, and TPMS that may have been set during the upgrade.

9. Start the engine to confirm proper operation of the vehicle.

SUBJECT: KNOCK SENSOR DETECTION SYSTEM – ECU LOGIC IMPROVEMENT (PI1802)

AFFECTED VEHICLE RANGE:

Model	Production Date Range
15MY Sorento (XMa) (2.4)	January 3, 2014 through December 11, 2014
14MY Optima (TF) (2.4)	August 29, 2013 through April 25, 2014
14-15MY Sportage (SL) (2.4 & 2.0T)	September 30, 2013 through April 8, 2015
15MY Optima (QF/TF) (2.4 & 2.0T)	April 16, 2014 through October 2, 2015

WARRANTY INFORMATION:

N Code: N99 C Code: C99

Model	Claim Type	Causal P/N	Qty.	Repair Description	Labor Op Code	Op Time	Replacement P/N	Qty.
XMa (15MY)	R	39113 2GBK1	0	(PI1802A) KSDS - ECU Logic Improvement	180A10R0	0.3 M/H	N/A	0
TF (14-15MY)	R	39108 2GBE0	0	(PI1802A) KSDS - ECU Logic Improvement	180107R0	0.3 M/H	N/A	0
QF (15MY)	R	39108 2GBH1	0	(PI1802A) KSDS - ECU Logic Improvement	180A15R0	0.3 M/H	N/A	0
SL (14-15MY)	R	39107 2GCD5	0	(PI1802A) KSDS - ECU Logic Improvement	180108R0	0.3 M/H	N/A	0

*** NOTICE**

VIN inquiry data for this repair is provided for tracking purposes only. Kia retailers should reference PI1802* when accessing the WebDCS system.

PE19-004

KIA

TAB 55_ PI1802_TSB_R2

	GROUP	MODEL
	Product Improvement	**2015MY Sorento (XMa) 2014-2015MY Optima (TF, QF) Sportage (SL)**
	NUMBER	DATE
	1802 (Rev 2, 09/24/2018)	**July 2018**

SUBJECT: # PRODUCT IMPROVEMENT CAMPAIGN

KNOCK SENSOR DETECTION SYSTEM - ECU LOGIC IMPROVEMENT (PI1802)

★ NOTICE

This bulletin has been revised to include additional information. New/revised sections of this bulletin are indicated by a black bar in the margin area.

This bulletin provides information related to a software update to the Engine Control Unit (ECU) to install the Knock Sensor Detection System (KSDS) in order to protect the engine from excessive connecting rod bearing damage. This update is for:

- Some 2014MY Optima (TF) vehicles equipped with 2.4L GDI engines, manufactured at KMC from August 29, 2013 through April 25, 2014;
- All 2015MY Optima (TF/QF) vehicles equipped with 2.4L GDI and 2.0L Turbocharged GDI (T-GDI) engines;
- All 2014-2015MY Sportage (SL) vehicles equipped with 2.4L GDI and 2.0L Turbocharged GDI (T-GDI) engines;
- All 2015MY Sorento (XMa) vehicles equipped with 2.4L GDI engines, manufactured from January 3, 2014 through December 11, 2014.

The KSDS detects vibrations indicating the onset of excessive connecting rod bearing wear. It is designed to alert the driver at an early stage of bearing wear before the occurrence of severe engine damage, including engine failure. If vibrations caused by bearing wear start to occur, the Malfunction Indicator Lamp (MIL) will blink continuously, and the vehicle will be placed in Limp Home Mode. This will reduce further damage to the engine and ensure that the vehicle occupants are not exposed to the risk of a more severe engine failure. At that time, Diagnostic Trouble Code ("DTC") P1326, specific to the KSDS, will be recorded in the ECU. The vehicle can continue to be operated for a limited time in Limp Home Mode, but it will accelerate slowly and have a reduced maximum speed. Also, engine RPMs will be limited to approximately 1800-2000 RPM.

Please note, since Kia launched this Product Improve Campaign, Kia has become aware that the KSDS software version installed on 2014~2015 MY Optima vehicles before September 7, 2018 has an error and requires the installation of a new corrected software. Kia has identified all affected 2014~2015 MY Optima vehicles which require the installation of the new corrected software, and these vehicles are identified under a separate campaign number, PI1802A1, in the WEBDCS.

Kia is requesting the completion of this Product Improvement Campaign on all affected vehicles. Before conducting the procedure, verify the vehicle is included in the list of affected VINs. Also, please have your KDS connected to the internet regularly to get the latest software updates available.

File Under: <Product Improvement>

Circulate To: ☒ **General Manager** ☒ **Service Manager** ☒ **Parts Manager**
☒ **Service Advisors** ☒ **Technicians** ☒ **Body Shop Manager** ☐ **Fleet Repair**

SUBJECT: KNOCK SENSOR DETECTION SYSTEM – ECU LOGIC IMPROVEMENT (PI1802)

* NOTICE

To assure complete customer satisfaction, always remember to refer to WebDCS Warranty Coverage (validation) Inquiry Screen (Service → Warranty Coverage → Warranty Coverage Inquiry) for a list of any additional campaigns that may need to be performed on the vehicle before returning it to the customer.

ECU Upgrade Procedure:

To correct this condition, the ECU should be reprogrammed using the KDS download, as described in this bulletin.

Upgrade Event Name
374.XMa Theta 2.4GDI Knock Sensor Detection System (KSDS) ECU Upgrade
375.TF Theta 2.0/2.4GDI Knock Sensor Detection System (KSDS) ECU Upgrade
376.SL Theta 2.0/2.4GDI Knock Sensor Detection System (KSDS) ECU Upgrade
377.QF Theta 2.0/2.4GDI Knock Sensor Detection System (KSDS) ECU Upgrade

* NOTICE

- **A fully charged battery is necessary before ECU upgrade can take place. It is recommended that the Midtronics GR8-1299 system be used in ECU mode during charging. DO NOT connect any other battery charger to the vehicle during ECU upgrade.**
- **All ECU upgrades must be done with the ignition key in the 'ON' position.**
- **Be careful not to disconnect the VCI-II connected to the vehicle during the ECU upgrade procedure.**
- **DO NOT start the engine during ECU upgrade.**
- **DO NOT turn the ignition key 'OFF' or interrupt the power supply during ECU upgrade.**
- **When the ECU upgrade is completed, turn the ignition 'OFF' and wait 10 seconds before starting the engine.**
- **ONLY use approved ECU upgrade software designated for the correct model, year.**

⚠ CAUTION

Before attempting an ECU upgrade on any Kia model, make sure to first determine whether the particular model is equipped with an immobilizer security system. Failure to follow proper procedures may cause the PCM to become inoperative after the upgrade and any claims associated with this repair may be subject to chargeback.

* NOTICE

For Optima models included in this TSB:
VINs that start with 5XX are designated Optima (QF) and produced in the United States. VINs that start with KNA are designated Optima (TF) are produced in South Korea.

SUBJECT: KNOCK SENSOR DETECTION SYSTEM – ECU LOGIC IMPROVEMENT (PI1802)

ROM ID INFORMATION TABLE:

Upgrade Event #374, #375, #376, #377

Model	ENG	IMMO	ECU P/No.	ROM ID	
				Previous	New
15MY Sor. (XMa)	2.4 (ULEV)	Yes	39113-2GBK6 39113-2GBK7 39113-2GBL6 39113-2GBL7	FFC4RH2A FFC4RHAA FFC4RHAB FFC4RHAK	FFC4RHAL
		No	39113-2GBK1 39113-2GBK2 39113-2GBL1 39113-2GBL2	FFC4MH2A FFC4MHAA FFC4MHAB FFC4MHAK	FFC4MHAL
14MY Opt. (TF)	2.4 (ULEV)	Yes	39108-2GBF0 39118-2GBF0	TEC4RH2K TEC4RH2L TEC4RH25	TEC4RH26
		No	39108-2GBE0 39118-2GBE0	TEC4MH2K TEC4MH2L TEC4MH25	TEC4MH26
	2.4 (SULEV)	Yes	39108-2GBF5	TES4RH2K TES4RH2L TES4RH25	TES4RH26
		No	39108-2GBE5	TES4MH2K TES4MH2L TES4MH25	TES4MH26
15MY Opt. (TF)	2.4 (ULEV)	Yes	39108-2GBF1	TFC4RH4K TFC4RH4L TFC4RH45	TFC4RH46
		No	39108-2GBE1 39118-2GBE1	TFC4MH4K TFC4MH4L TFC4MH45	TFC4MH46
	2.4 (SULEV)	No	39108-2GBE6	TFS4MH4K TFS4MH4L TFS4MH45	TFS4MH46
14MY Opt. (TF)	2.0T (ULEV)	Yes	39108-2GBG5 39108-2GBG6	TEC0RH2K TEC0RH2L TEC0RH25	TEC0RH26
		No	39108-2GBG0 39108-2GBG1	TEC0MH2K TEC0MH2L TEC0MH25	TEC0MH26
15MY Opt. (TF)	2.0T (ULEV)	Yes	39108-2GBG7	TFC0RH4K TFC0RH4L TFC0RH45	TFC0RH46
14MY Spo. (SL)	2.4 (ULEV)	Yes	39107-2GCD0 39107-2GCE0 39117-2GCD0 39117-2GCE0	SEC4RH2A SEC4RH2B SEC4RH2C SEC4RH2D	SEC4RH2K
		No	39107-2GCD5 39107-2GCE5 39117-2GCD5 39117-2GCE5	SEC4MH2A SEC4MH2B SEC4MH2C SEC4MH2D	SEC4MH2K
	2.4 (SULEV)	Yes	39107-2GCG0	SES4RH2A SES4RH2B SES4RH2C SES4RH2D	SES4RH2K

SUBJECT: KNOCK SENSOR DETECTION SYSTEM – ECU LOGIC IMPROVEMENT (PI1802)

Model	ENG	IMMO	ECU P/No.	ROM ID	
				Previous	New
14MY Spo. (SL)	2.4 (SULEV)	Yes	39107-2GCG0	SES4RH2A SES4RH2B SES4RH2C SES4RH2D	SES4RH2K
		No	39107-2GCG5	SES4MH2A SES4MH2B SES4MH2C SES4MH2D	SES4MH2K
15MY Spo. (SL)	2.4 (ULEV)	Yes	39107-2GCD1 39107-2GCD2 39107-2GCE1 39107-2GCE2 39117-2GCD1 39117-2GCE1	SFC4RH4A SFC4RH4B	SFC4RH4K
		No	39107-2GCD6 39107-2GCD7 39107-2GCE6 39107-2GCE7 39117-2GCD6 39117-2GCE6	SFC4MH4A SFC4MH4B	SFC4MH4K
	2.4 (SULEV)	Yes	39107-2GCG1 39107-2GCG2	SFS4RH4A SFS4RH4B	SFS4RH4K
		No	39107-2GCG6 39107-2GCG7	SFS4MH4A SFS4MH4B	SFS4MH4K
14MY Spo. (SL)	2.0T (ULEV)	Yes	39107-2GCC0	SEC0RH2A	SEC0RH2K
		No	39107-2GCC5	SEC0MH2A	SEC0MH2K
	2.0T (ULEV)	Yes	39107-2GCC1 39107-2GCC2	SFC0RH4A	SFC0RH4K
		No	39107-2GCC6 39107-2GCC7	SFC0MH4A	SFC0MH4K
15MY Opt. (QF)	2.4 (ULEV)	Yes	39108-2GBJ1 39108-2GBJ2 39118-2GBJ1	TFC4RH4A TFC4RH4B TFC4RH41	TFC4RH42
		No	39108-2GBH1 39108-2GBH2 39118-2GBH1	TFC4MH4A TFC4MH4B TFC4MH41	TFC4MH42
	2.4 (SULEV)	Yes	39108-2GBJ6 39108-2GBJ7	TFS4RH4A TFS4RH4B TFS4RH41	TFS4RH42
		No	39108-2GBH6 39108-2GBH7	TFS4MH4A TFS4MH4B TFS4MH41	TFS4MH42
15MY Opt. (QF)	2.0T (ULEV)	Yes	39108-2GBK7 39108-2GBK8	TFC0RH4A TFC0RH4B TFC0RH41	TFC0RH42
		No	39108-2GBK2 39108-2GBK3	TFC0MH4A TFC0MH4B TFC0MH41	TFC0MH42

To verify the vehicle is affected, be sure to check the Calibration Identification of the vehicle's ECM ROM ID and reference the Information Table as necessary.

SUBJECT: KNOCK SENSOR DETECTION SYSTEM – ECU LOGIC IMPROVEMENT (PI1802)

★ NOTICE

Prior to performing the ECU upgrade, be sure to check that the KDS is fully charged.

1. Connect the VCI-II to the OBD-II connector, located under the driver's side of the instrument panel.



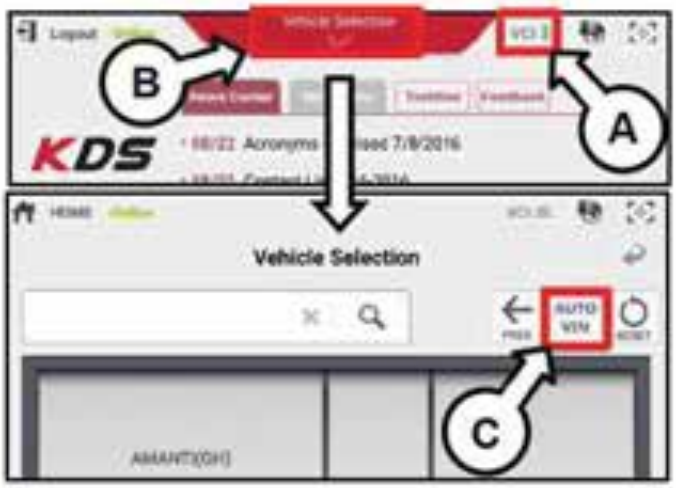
★ NOTICE

The ECU upgrade function on KDS operates wirelessly. It is not necessary to perform the upgrade via USB cable.

2. With the ignition ON, turn ON the KDS tablet. Select **KDS** from the home screen.



3. Confirm communication with VCI (A) and then configure the vehicle (B) using the **AUTO VIN** (C) feature.



4. Select **ECU Upgrade**.



SUBJECT: KNOCK SENSOR DETECTION SYSTEM – ECU LOGIC IMPROVEMENT (PI1802)

5. The KDS will check the server for recently uploaded Events and then automatically download **Upgrade Event #374 (XMa), #375 (TF), #376 (SL), or #377 (QF).**

★ NOTICE

The vehicle must be identified in Vehicle Selection to download an Event for that vehicle.



KDS screenshot shown above is for demonstration purposes only. Events shown in screenshot are not applicable to this bulletin.

6. Select **Auto Mode**.

★ NOTICE

Do NOT attempt to perform a Manual Mode upgrade <u>UNLESS Auto Mode fails</u>. Always follow the instructions given on the KDS in either Auto or Manual mode.



7. Select the **ENGINE** system under the System selection menu.

   Touch **ID Check** (D) and confirm that the latest update is available.

   Select **Upgrade Event #374 (XMa), #375 (TF), #376 (SL), or #377 (QF)** and select **Upgrade** to continue.



8. The ECU upgrade will begin and the progress of the upgrade will appear on the bar graph. Upgrade part (1/2) (E) will download the upgrade event to the VCI-II. Upgrade part (2/2) (F) will upgrade the ECU.

★ NOTICE

Do not touch the system buttons (like 'Back', 'Home', 'etc.') while performing ECU Upgrade.





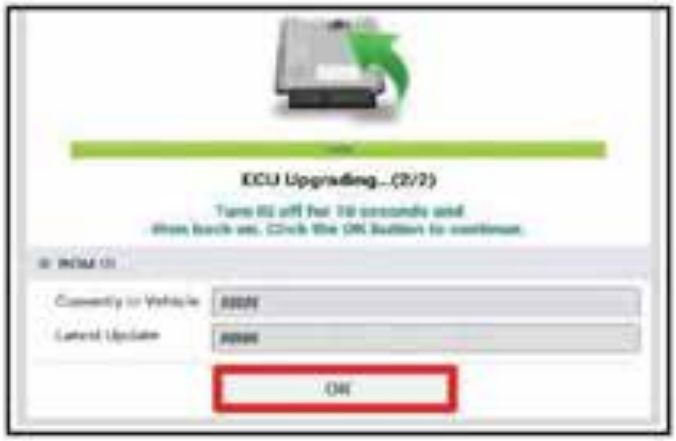
9. If a "Communication Fail" screen appears, verify that the VCI-II and KDS are communicating properly. Touch **OK** and restart the procedure from step 4.



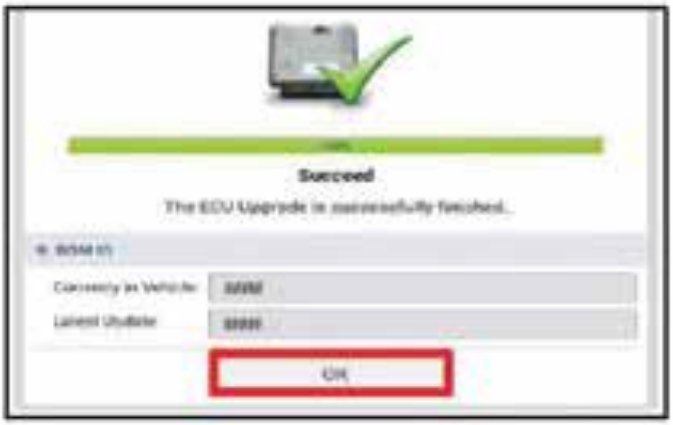
★ NOTICE

If an error notice continues to appear or if the upgrade cannot be performed, DO NOT disconnect the KDS/VCI-II. Contact GIT America Help Desk at (888) 542-4371 or Techline.

10. When instructed on the KDS, turn the ignition **OFF** for ten (10) seconds then back on. Touch **OK** to continue.



11. Once the upgrade is complete, touch **OK** to finalize the procedure.



12. When prompted, select **YES** to check for Diagnostic Trouble Codes (DTC) and erase any DTCs stored such as EPS, ESC, and TPMS that may have been set during the upgrade.



13. Start the engine to confirm proper operation of the vehicle.

SUBJECT: KNOCK SENSOR DETECTION SYSTEM – ECU LOGIC IMPROVEMENT (PI1802)

Manual Upgrade Procedure:

★ NOTICE

The manual upgrade should ONLY be performed if the automatic upgrade fails.

If the automatic upgrade fails, turn the ignition OFF for about 10 seconds then place it back in the ON position to reset the control unit BEFORE performing manual upgrade.

See table below for Manual Mode passwords.

Manual Mode ECU Upgrade Passwords

Model	Menu	Password
XMa	XMA 2.4GDI -IMMO : 39113-2GBK1/K2/L1/L2	1322
	XMA 2.4GDI +IMMO/SMK : 39113-2GBK6/K7/L6/L7	1327
TF 2.0T	TF F/L 2.0 TGDI 14MY(ULEV) -IMMO : 39108-2GBG0/G1	8201
	TF F/L 2.0 TGDI 14MY(ULEV) +IMMO/SMK : 39108-2GBG5/G6	8256
	TF F/L 2.0 TGDI 15MY(ULEV) +IMMO/SMK : 39108-2GBG7	0827
TF 2.4	TF F/L 2.4 GDI 14MY(ULEV) -IMMO : 39108/18-2GBE0	1820
	TF F/L 2.4 GDI 14MY(ULEV) +IMMO/SMK : 39108/18-2GBF0	1821
	TF F/L 2.4 GDI 14MY(SULEV) -IMMO : 39108-2GBE5	0828
	TF F/L 2.4 GDI 14MY(SULEV) +IMMO/SMK : 39108-2GBF5	0829
	TF F/L 2.4 GDI 15MY(ULEV) -IMMO : 39108/18-2GBE1	1822
	TF F/L 2.4 GDI 15MY(ULEV) +IMMO/SMK : 39108-2GBF1	0821
	TF F/L 2.4 GDI 15MY(SULEV) -IMMO : 39108-2GBE6	0826
SL 2.0T	SL 2.0 TGDI 14MY(ULEV) -IMMO : 39107-2GCC5	0725
	SL 2.0 TGDI 14MY(ULEV) +IMMO/SMK : 39107-2GCC0	0720
	SL 2.0 TGDI 15MY(ULEV) -IMMO : 39107-2GCC6/C7	7267
	SL 2.0 TGDI 15MY(ULEV) +IMMO/SMK : 39107-2GCC1/C2	7212
SL 2.4	SL 2.4 GDI 14MY(ULEV) -IMMO : 39107/17-2GCD5/E5	7255
	SL 2.4 GDI 14MY(ULEV) +IMMO/SMK : 39107/17-2GCD0/E0	7200
	SL 2.4 GDI 14MY(SULEV) -IMMO : 39107-2GCG5	0726
	SL 2.4 GDI 14MY(SULEV) +IMMO/SMK : 39107-2GCG0	0721
	SL 2.4 GDI 15MY(ULEV) -IMMO : 39107-2GCD6/D7/E6/E7, 39117-2GCD6/E6	7266
	SL 2.4 GDI 15MY(ULEV) +IMMO/SMK : 39107-2GCD1/D2/E1/E2, 39117-2GCD1/E1	7211
	SL 2.4 GDI 15MY(SULEV) -IMMO : 39107-2GCG6/G7	7268
	SL 2.4 GDI 15MY(SULEV) +IMMO/SMK : 39107-2GCG1/G2	7213
QF 2.0T	QF 2.0 TGDI 15MY(ULEV) -IMMO : 39108-2GBK2/K3	0823
	QF 2.0 TGDI 15MY(ULEV) +IMMO/SMK : 39108-2GBK7/K8	0828
QF 2.4	QF 2.4 GDI 15MY(ULEV) -IMMO : 39108-2GBH1/H2, 39118-2GBH1	1821
	QF 2.4 GDI 15MY(ULEV) +IMMO/SMK : 39108-2GBJ1/J2, 39118-2GBJ1	1822
	QF 2.4 GDI 15MY(SULEV) -IMMO : 39108-2GBH6/H7	0827
	QF 2.4 GDI 15MY(SULEV) +IMMO/SMK : 39108-2GBJ6/J7	0829

1. Within the ECU Upgrade screen displayed, select **Manual Mode**.
2. Select the **ENGINE** system under the System selection menu. Select **Upgrade Event #374 (XMa), #375 (TF), #376 (SL), or #377 (QF)** and select **Upgrade** to continue.
3. Select the appropriate control unit part number with reference to the ROM ID Information Table on page 3-4, and select **OK**.
4. Enter the appropriate password from the Manual Mode password table above and select **OK**.
5. The upgrade will begin and the progress of the upgrade will appear on the bar graph.
6. When instructed on the KDS, turn the ignition **OFF** for ten (10) seconds then back on. Touch **OK** to continue.
7. Once the upgrade is complete, touch **OK** to finalize the procedure.
8. When prompted, select **YES** to check for Diagnostic Trouble Codes (DTC) and erase any DTCs stored such as EPS, ESC, and TPMS that may have been set during the upgrade.
9. Start the engine to confirm proper operation of the vehicle.

SUBJECT: KNOCK SENSOR DETECTION SYSTEM – ECU LOGIC IMPROVEMENT (PI1802)

AFFECTED VEHICLE RANGE:

Model	Production Date Range
15MY Sorento (XMa) (2.4)	January 3, 2014 through December 11, 2014
14MY Optima (TF) (2.4)	August 29, 2013 through April 25, 2014
14-15MY Sportage (SL) (2.4 & 2.0T)	September 30, 2013 through April 8, 2015
15MY Optima (QF/TF) (2.4 & 2.0T)	April 16, 2014 through October 2, 2015

WARRANTY INFORMATION (PI1802A):
N Code: N99 C Code: C99

Model	Claim Type	Causal P/N	Qty.	Repair Description	Labor Op Code	Op Time	Replacement P/N	Qty.
XMa (15MY)	R	39113 2GBK1	0	(PI1802A) KSDS - ECU Logic Improvement	180A10R0	0.3 M/H	N/A	0
TF (14-15MY)	R	39108 2GBE0	0	(PI1802A) KSDS - ECU Logic Improvement	180107R0	0.3 M/H	N/A	0
QF (15MY)	R	39108 2GBH1	0	(PI1802A) KSDS - ECU Logic Improvement	180A15R0	0.3 M/H	N/A	0
SL (14-15MY)	R	39107 2GCD5	0	(PI1802A) KSDS - ECU Logic Improvement	180108R0	0.3 M/H	N/A	0

WARRANTY INFORMATION (PI1802A1):
N Code: N99 C Code: C99

Model	Claim Type	Causal P/N	Qty.	Repair Description	Labor Op Code	Op Time	Replacement P/N	Qty.
TF (14-15MY)	R	39108 2GBE0	0	(PI1802A1) KSDS - ECU Logic Improvement	180119R0	0.3 M/H	N/A	0
QF (15MY)	R	39108 2GBH1	0	(PI1802A1) KSDS - ECU Logic Improvement	180A17R0	0.3 M/H	N/A	0

*** NOTICE**

VIN inquiry data for this repair is provided for tracking purposes only. Kia retailers should reference PI1802* when accessing the WebDCS system.

PE19-004

KIA

TAB 56_ PI1802_TSB_R

	GROUP	MODEL
	Product Improvement	**See Model List on Page 1**
	NUMBER	DATE
	1802 (Rev 3, 12/04/2018)	**July 2018**

PRODUCT IMPROVEMENT CAMPAIGN

SUBJECT: KNOCK SENSOR DETECTION SYSTEM - ECU LOGIC IMPROVEMENT (PI1802)

★ NOTICE

This bulletin has been revised to include additional information. New/revised sections of this bulletin are indicated by a black bar in the margin area.

This bulletin provides information related to a software update to the Engine Control Unit (ECU) to install the Knock Sensor Detection System (KSDS) in order to protect the engine from excessive connecting rod bearing damage. This update is for:

Year	Model	Engine	Production Date
2014	Optima (TF)	2.4L GDI	8/29/13 – 4/25/14
2015-2016	Optima (TF/QF/JF/JFa)	2.4L & 2.0T GDI	4/16/14 – 10/12/16
2014-2016	Sportage (SL)	2.4L & 2.0T GDI	9/30/13 – 11/16/15
2015-2016	Sorento (XMa/UMa)	2.4L & 2.0T GDI	1/3/14 – 4/26/16

The KSDS detects vibrations indicating the onset of excessive connecting rod bearing wear. It is designed to alert the driver at an early stage of bearing wear before the occurrence of severe engine damage, including engine failure. If vibrations caused by bearing wear start to occur, the Malfunction Indicator Lamp (MIL) will blink continuously, and the vehicle will be placed in Limp Home Mode. This will reduce further damage to the engine and ensure that the vehicle occupants are not exposed to the risk of a more severe engine failure. At that time, Diagnostic Trouble Code ("DTC") P1326, specific to the KSDS, will be recorded in the ECU. The vehicle can continue to be operated for a limited time in Limp Home Mode, but it will accelerate slowly and have a reduced maximum speed. Also, engine RPMs will be limited to approximately 1800-2000 RPM.

Please note, since Kia launched this Product Improve Campaign, Kia has become aware that the KSDS software version installed on 2014-2015MY Optima vehicles before September 7, 2018 has an error and requires the installation of a new corrected software. Kia has identified all affected 2014-2015MY Optima vehicles which require the installation of the new corrected software, and these vehicles are identified under a separate campaign number, PI1802A1, in the WEBDCS.

Kia is requesting the completion of this Product Improvement Campaign on all affected vehicles. Before conducting the procedure, verify the vehicle is included in the list of affected VINs. Also, please have your KDS connected to the internet regularly to get the latest software updates available.

File Under: <Product Improvement>

Circulate To: ☒ **General Manager** ☒ **Service Manager** ☒ **Parts Manager**
☒ **Service Advisors** ☒ **Technicians** ☒ **Body Shop Manager** ☐ **Fleet Repair**

SUBJECT: KNOCK SENSOR DETECTION SYSTEM – ECU LOGIC IMPROVEMENT (PI1802)

★ NOTICE

To assure complete customer satisfaction, always remember to refer to WebDCS Warranty Coverage (validation) Inquiry Screen (Service → Warranty Coverage → Warranty Coverage Inquiry) for a list of any additional campaigns that may need to be performed on the vehicle before returning it to the customer.

ECU Upgrade Procedure:

To correct this condition, the ECU should be reprogrammed using the KDS download, as described in this bulletin.

Upgrade Event Name
374.XMa Theta 2.4GDI Knock Sensor Detection System (KSDS) ECU Upgrade
375.TF Theta 2.0/2.4GDI Knock Sensor Detection System (KSDS) ECU Upgrade
376.SL Theta 2.0/2.4GDI Knock Sensor Detection System (KSDS) ECU Upgrade
377.QF Theta 2.0/2.4GDI Knock Sensor Detection System (KSDS) ECU Upgrade
392. UMa THETA 2.0/2.4 Knock Sensor Detection System (KSDS) ECU Upgrade (16MY)
393. JF/JFa THETA 2.0/2.4 Knock Sensor Detection System (KSDS) ECU Upgrade (16MY)
394. SL THETA 2.0/2.4 Knock Sensor Detection System (KSDS) ECU Upgrade (16MY)

★ NOTICE

- **A fully charged battery is necessary before ECU upgrade can take place. It is recommended that the Midtronics GR8-1299 system be used in ECU mode during charging. DO NOT connect any other battery charger to the vehicle during ECU upgrade.**
- **All ECU upgrades must be done with the ignition key in the 'ON' position.**
- **Be careful not to disconnect the VCI-II connected to the vehicle during the ECU upgrade procedure.**
- **DO NOT start the engine during ECU upgrade.**
- **DO NOT turn the ignition key 'OFF' or interrupt the power supply during ECU upgrade.**
- **When the ECU upgrade is completed, turn the ignition 'OFF' and wait 10 seconds before starting the engine.**
- **ONLY use approved ECU upgrade software designated for the correct model, year.**

⚠ CAUTION

Before attempting an ECU upgrade on any Kia model, make sure to first determine whether the particular model is equipped with an immobilizer security system. Failure to follow proper procedures may cause the PCM to become inoperative after the upgrade and any claims associated with this repair may be subject to chargeback.

★ NOTICE

For Optima models included in this TSB:
VINs that start with 5XX are designated Optima (QF/JFa) and produced in the United States. VINs that start with KNA are designated Optima (TF/JF) are produced in South Korea.

SUBJECT: KNOCK SENSOR DETECTION SYSTEM – ECU LOGIC IMPROVEMENT (PI1802)

ROM ID INFORMATION TABLE:

Upgrade Event #374, #375, #376, #377, #392, #393, #394

Model	ENG	IMMO	ECU P/No.	ROM ID	
				Previous	New
15MY Sor. (XMa)	2.4 (ULEV)	Yes	39113-2GBK6 39113-2GBK7 39113-2GBL6 39113-2GBL7	FFC4RH2A FFC4RHAA FFC4RHAB	FFC4RHAK FFC4RHAL
		No	39113-2GBK1 39113-2GBK2 39113-2GBL1 39113-2GBL2	FFC4MH2A FFC4MHAA FFC4MHAB	FFC4MHAK FFC4MHAL
14MY Opt. (TF)	2.4 (ULEV)	Yes	39108-2GBF0 39118-2GBF0	TEC4RH2K TEC4RH2L TEC4RH25	TEC4RH26
		No	39108-2GBE0 39118-2GBE0	TEC4MH2K TEC4MH2L TEC4MH25	TEC4MH26
	2.4 (SULEV)	Yes	39108-2GBF5	TES4RH2K TES4RH2L TES4RH25	TES4RH26
		No	39108-2GBE5	TES4MH2K TES4MH2L TES4MH25	TES4MH26
15MY Opt. (TF)	2.4 (ULEV)	Yes	39108-2GBF1	TFC4RH4K TFC4RH4L TFC4RH45	TFC4RH46
		No	39108-2GBE1 39118-2GBE1	TFC4MH4K TFC4MH4L TFC4MH45	TFC4MH46
	2.4 (SULEV)	No	39108-2GBE6	TFS4MH4K TFS4MH4L TFS4MH45	TFS4MH46
14MY Opt. (TF)	2.0T (ULEV)	Yes	39108-2GBG5 39108-2GBG6	TEC0RH2K TEC0RH2L TEC0RH25	TEC0RH26
		No	39108-2GBG0 39108-2GBG1	TEC0MH2K TEC0MH2L TEC0MH25	TEC0MH26
15MY Opt. (TF)	2.0T (ULEV)	Yes	39108-2GBG7	TFC0RH4K TFC0RH4L TFC0RH45	TFC0RH46
14MY Spo. (SL)	2.4 (ULEV)	Yes	39107-2GCD0 39107-2GCE0 39117-2GCD0 39117-2GCE0	SEC4RH2A SEC4RH2B SEC4RH2C SEC4RH2D	SEC4RH2K
		No	39107-2GCD5 39107-2GCE5 39117-2GCD5 39117-2GCE5	SEC4MH2A SEC4MH2B SEC4MH2C SEC4MH2D	SEC4MH2K
	2.4 (SULEV)	Yes	39107-2GCG0	SES4RH2A SES4RH2B SES4RH2C SES4RH2D	SES4RH2K

SUBJECT: KNOCK SENSOR DETECTION SYSTEM – ECU LOGIC IMPROVEMENT (PI1802)

Model	ENG	IMMO	ECU P/No.	ROM ID	
				Previous	New
14MY Spo. (SL)	2.4 (SULEV)	Yes	39107-2GCG0	SES4RH2A SES4RH2B SES4RH2C SES4RH2D	SES4RH2K
		No	39107-2GCG5	SES4MH2A SES4MH2B SES4MH2C SES4MH2D	SES4MH2K
15MY Spo. (SL)	2.4 (ULEV)	Yes	39107-2GCD1 39107-2GCD2 39107-2GCE1 39107-2GCE2 39117-2GCD1 39117-2GCE1	SFC4RH4A SFC4RH4B	SFC4RH4K
		No	39107-2GCD6 39107-2GCD7 39107-2GCE6 39107-2GCE7 39117-2GCD6 39117-2GCE6	SFC4MH4A SFC4MH4B	SFC4MH4K
	2.4 (SULEV)	Yes	39107-2GCG1 39107-2GCG2	SFS4RH4A SFS4RH4B	SFS4RH4K
		No	39107-2GCG6 39107-2GCG7	SFS4MH4A SFS4MH4B	SFS4MH4K
14MY Spo. (SL)	2.0T (ULEV)	Yes	39107-2GCC0	SEC0RH2A	SEC0RH2K
		No	39107-2GCC5	SEC0MH2A	SEC0MH2K
	2.0T (ULEV)	Yes	39107-2GCC1 39107-2GCC2	SFC0RH4A	SFC0RH4K
		No	39107-2GCC6 39107-2GCC7	SFC0MH4A	SFC0MH4K
15MY Spo. (SL)	2.0T (ULEV)	Yes	39107-2GCC3	SGC0RH4A	SGC0RH4K
		No	39107-2GCC8	SGC0MH4A	SGC0MH4K
15MY Opt. (QF)	2.4 (ULEV)	Yes	39108-2GBJ1 39108-2GBJ2 39118-2GBJ1	TFC4RH4A TFC4RH4B TFC4RH41	TFC4RH42
		No	39108-2GBH1 39108-2GBH2 39118-2GBH1	TFC4MH4A TFC4MH4B TFC4MH41	TFC4MH42
	2.4 (SULEV)	Yes	39108-2GBJ6 39108-2GBJ7	TFS4RH4A TFS4RH4B TFS4RH41	TFS4RH42
		No	39108-2GBH6 39108-2GBH7	TFS4MH4A TFS4MH4B TFS4MH41	TFS4MH42
15MY Opt. (QF)	2.0T (ULEV)	Yes	39108-2GBK7 39108-2GBK8	TFC0RH4A TFC0RH4B TFC0RH41	TFC0RH42
		No	39108-2GBK2 39108-2GBK3	TFC0MH4A TFC0MH4B TFC0MH41	TFC0MH42

SUBJECT: KNOCK SENSOR DETECTION SYSTEM – ECU LOGIC IMPROVEMENT (PI1802)

Model	ENG	IMMO	ECU P/No.	ROM ID	
				Previous	New
16MY Sor. (UMa) 2WD	2.4 (ULEV)	Yes	39100-2GGF5	2WD_UMAFNC4ER91A 2WD_UMAFNC4ER92A 2WD_UMAGNC4ERA31 2WD_UMAFNC4ERA51 2WD_UMAFNC4ERA52	2WD_UMAFNC4ERA6K
			39100-2GGF6	2WD_UMAFNC4ERA3A 2WD_UMAFNC4ERA5A 2WD_UMAFNC4ERA5B 2WD_UMAFNC4ERA5C	2WD_UMAFNC4ERA6M
		No	39100-2GGF0	2WD_UMAFNC4EM91A 2WD_UMAFNC4EM92A 2WD_UMAGNC4EMA31 2WD_UMAFNC4EMA51 2WD_UMAFNC4EMA52	2WD_UMAFNC4EMA6K
			39100-2GGF1	2WD_UMAFNC4EMA3A 2WD_UMAFNC4EMA5A 2WD_UMAFNC4EMA5B 2WD_UMAFNC4EMA5C	2WD_UMAFNC4EMA6M
16MY Sor. (UMa) 4WD	2.4 (ULEV)	Yes	39100-2GGH5	4WD_UMAFNC4ER91A 4WD_UMAFNC4ER92A 4WD_UMAGNC4ERA31 4WD_UMAFNC4ERA51 4WD_UMAFNC4ERA52	4WD_UMAFNC4ERA6O
			39100-2GGH6	4WD_UMAFNC4ERA3A 4WD_UMAFNC4ERA5A 4WD_UMAFNC4ERA5B 4WD_UMAFNC4ERA5C	4WD_UMAFNC4ERA6P
		No	39100-2GGH0	4WD_UMAFNC4EM91A 4WD_UMAFNC4EM92A 4WD_UMAGNC4EMA31 4WD_UMAFNC4EMA51 4WD_UMAFNC4EMA52	4WD_UMAFNC4EMA6O
			39100-2GGH1	4WD_UMAFNC4EMA3A 4WD_UMAFNC4EMA5A 4WD_UMAFNC4EMA5B 4WD_UMAFNC4EMA5C	4WD_UMAFNC4EMA6P
16MY Sor. (UMa) 2WD	2.0T (ULEV)	Yes	39100-2GTC6	2WD_UMAGNC0ERA3A 2WD_UMAGNC0ERA5A 2WD_UMAGNC0ERA61	2WD_UMAGNC0ERA6K
		No	39100-2GTC1	2WD_UMAGNC0EMA3A 2WD_UMAGNC0EMA5A 2WD_UMAGNC0EMA61	2WD_UMAGNC0EMA6K
16MY Sor. (UMa) 4WD	2.0T (ULEV)	Yes	39100-2GTD6	4WD_UMAGNC0ERA3A 4WD_UMAGNC0ERA5A 4WD_UMAGNC0ERA61	4WD_UMAGNC0ERA6L
		No	39100-2GTD1	4WD_UMAGNC0EMA3A 4WD_UMAGNC0EMA5A 4WD_UMAGNC0EMA61	4WD_UMAGNC0EMA6L

SUBJECT: KNOCK SENSOR DETECTION SYSTEM – ECU LOGIC IMPROVEMENT (PI1802)

Model	ENG	IMMO	ECU P/No.	ROM ID	
				Previous	New
16MY Opt. (JF/JFa)	2.4 (ULEV)	Yes	39108-2GGC5	JFAGNC4ERB0A JFAGNC4ERB0B JFAGNC4ERC0A JFAGNC4ERC3A	JFAGNC4ERC3K
			39108-2GGC5	JFAGNC4ERD11	JFAGNC4ERD1K
		No	39108-2GGC0	JFAGNC4EMB0A JFAGNC4EMB0B JFAGNC4EMC0A JFAGNC4EMC3A	JFAGNC4EMC3K
			39108-2GGC0	JFAGNC4EMD11	JFAGNC4EMD1K
	2.4 (SULEV)	Yes	39108-2GGD5	JFAGNS4ERB0A JFAGNS4ERB0B JFAGNS4ERC0A JFAGNS4ERC3A	JFAGNS4ERC3K
			39108-2GGD5	JFAGNS4ERD11	JFAGNS4ERD1K
		No	39108-2GGD0	JFAGNS4EMB0A JFAGNS4EMB0B JFAGNS4EMC0A JFAGNS4EMC3A	JFAGNS4EMC3K
			39108-2GGD0	JFAGNS4EMD11	JFAGNS4EMD1K
16MY Opt. (JFa)	2.0T (ULEV)	Yes	39108-2GTK5	JFAGNC0ERB0A JFAGNC0ERB0B JFAGNC0ERB4A	JFAGNC0ERB4K
		No	39108-2GTK0	JFAGNC0EMB0A JFAGNC0EMB0B JFAGNC0EMB4A	JFAGNC0EMB4K
16MY Spo. (SL)	2.4 (ULEV)	Yes	39107-2GCD3 39107-2GCE3 39117-2GCD3 39117-2GCE3	SGC4RH4A SGC4RH4B	SGC4RH4K
		No	39107-2GCD8 39107-2GCE8 39117-2GCD8 39117-2GCE8	SGC4MH4A SGC4MH4B	SGC4MH4K
	2.4 (SULEV)	Yes	39107-2GCG3	SGS4RH4A SGS4RH4B	SGS4RH4K
		No	39107-2GCG8	SGS4MH4A SGS4MH4B	SGS4MH4K

To verify the vehicle is affected, be sure to check the Calibration Identification of the vehicle's ECM ROM ID and reference the Information Table as necessary.

SUBJECT: KNOCK SENSOR DETECTION SYSTEM – ECU LOGIC IMPROVEMENT (PI1802)

★ NOTICE

Prior to performing the ECU upgrade, be sure to check that the KDS is fully charged.

1. Connect the VCI-II to the OBD-II connector, located under the driver's side of the instrument panel.



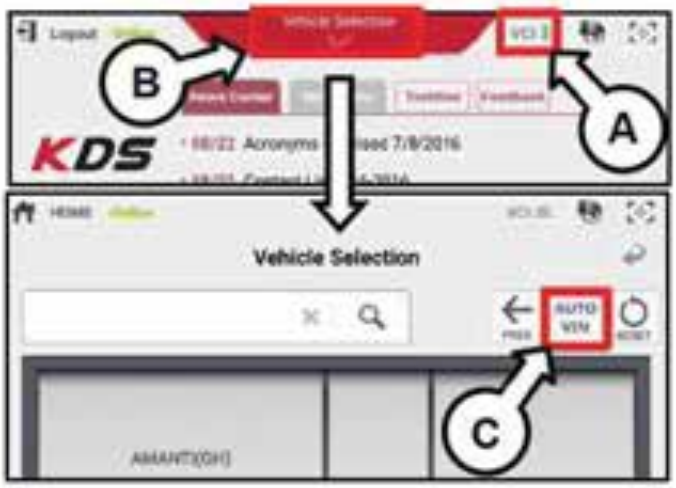
★ NOTICE

The ECU upgrade function on KDS operates wirelessly. It is not necessary to perform the upgrade via USB cable.

2. With the ignition ON, turn ON the KDS tablet. Select **KDS** from the home screen.



3. Confirm communication with VCI (A) and then configure the vehicle (B) using the **AUTO VIN** (C) feature.



4. Select **ECU Upgrade**.



5. The KDS will check the server for recently uploaded Events and then automatically download **Upgrade Event #374 (XMa), #375 (TF), #376 (SL), #377 (QF), #392 (UMa), #393 (JF/JFa), or #394 (16MY SL).**

*** NOTICE**

The vehicle must be identified in Vehicle Selection to download an Event for that vehicle.



KDS screenshot shown above is for demonstration purposes only. Events shown in screenshot are not applicable to this bulletin.

6. Select **Auto Mode**.

*** NOTICE**

Do NOT attempt to perform a Manual Mode upgrade <u>UNLESS Auto Mode fails</u>. Always follow the instructions given on the KDS in either Auto or Manual mode.



7. Select the **ENGINE** system under the System selection menu.

Touch **ID Check** (D) and confirm that the latest update is available.

Select **Upgrade Event #374 (XMa), #375 (TF), #376 (SL), #377 (QF), #392 (UMa), #393 (JF/JFa), or #394 (16MY SL)** and select **Upgrade** to continue.



8. The ECU upgrade will begin and the progress of the upgrade will appear on the bar graph. Upgrade part (1/2) (E) will download the upgrade event to the VCI-II. Upgrade part (2/2) (F) will upgrade the ECU.

*** NOTICE**

Do not touch the system buttons (like 'Back', 'Home', 'etc.') while performing ECU Upgrade.





SUBJECT: KNOCK SENSOR DETECTION SYSTEM – ECU LOGIC IMPROVEMENT (PI1802)

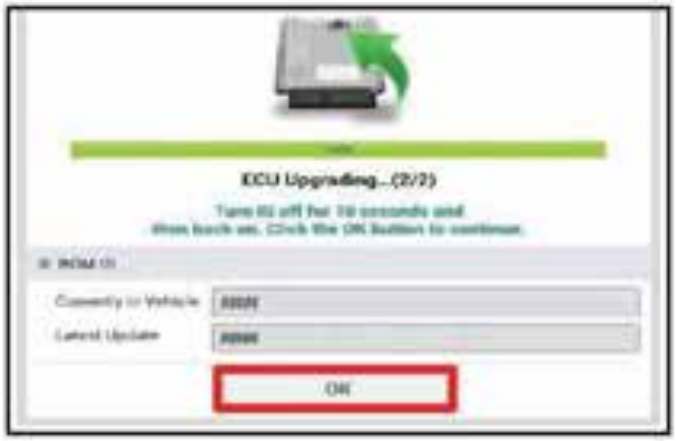
9. If a "Communication Fail" screen appears, verify that the VCI-II and KDS are communicating properly. Touch **OK** and restart the procedure from step 4.



★ NOTICE

If an error notice continues to appear or if the upgrade cannot be performed, DO NOT disconnect the KDS/VCI-II. Contact GIT America Help Desk at (888) 542-4371 or Techline.

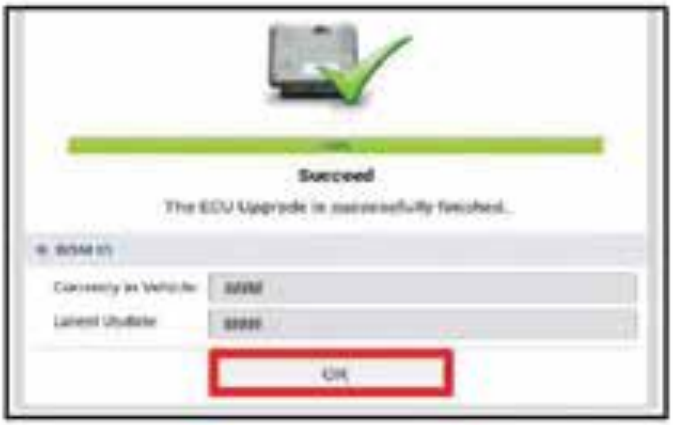
10. When instructed on the KDS, turn the ignition **OFF** for ten (10) seconds then back on. Touch **OK** to continue.



★ NOTICE

If applicable and instructed on the KDS, leave the ignition ON for five (5) seconds to perform ETC Adaptive Learning.

11. Once the upgrade is complete, touch **OK** to finalize the procedure.



12. When prompted, select **YES** to check for Diagnostic Trouble Codes (DTC) and erase any DTCs stored such as EPS, ESC, and TPMS that may have been set during the upgrade.



13. Start the engine to confirm proper operation of the vehicle.

SUBJECT: KNOCK SENSOR DETECTION SYSTEM – ECU LOGIC IMPROVEMENT (PI1802)

Manual Upgrade Procedure:

★ NOTICE

The manual upgrade should ONLY be performed if the automatic upgrade fails.

If the automatic upgrade fails, turn the ignition OFF for about 10 seconds then place it back in the ON position to reset the control unit BEFORE performing manual upgrade.

See table below for Manual Mode passwords.

Manual Mode ECU Upgrade Passwords (14-15MY)

Model	Menu	Password
XMa 2.4	XMA 2.4GDI -IMMO : 39113-2GBK1/K2/L1/L2	1322
	XMA 2.4GDI +IMMO/SMK : 39113-2GBK8/K7/L6/L7	1327
TF 2.0T	TF F/L 2.0 TGDI 14MY(ULEV) -IMMO : 39108-2GBG0/G1	8201
	TF F/L 2.0 TGDI 14MY(ULEV) +IMMO/SMK : 39108-2GBG5/G6	8256
	TF F/L 2.0 TGDI 15MY(ULEV) +IMMO/SMK : 39108-2GBG7	0827
TF 2.4	TF F/L 2.4 GDI 14MY(ULEV) -IMMO : 39108/18-2GBE0	1820
	TF F/L 2.4 GDI 14MY(ULEV) +IMMO/SMK : 39108/18-2GBF0	1821
	TF F/L 2.4 GDI 14MY(SULEV) -IMMO : 39108-2GBE5	0828
	TF F/L 2.4 GDI 14MY(SULEV) +IMMO/SMK : 39108-2GBF5	0829
	TF F/L 2.4 GDI 15MY(ULEV) -IMMO : 39108/18-2GBE1	1822
	TF F/L 2.4 GDI 15MY(ULEV) +IMMO/SMK : 39108-2GBF1	0821
	TF F/L 2.4 GDI 15MY(SULEV) -IMMO : 39108-2GBE6	0826
SL 2.0T	SL 2.0 TGDI 14MY(ULEV) -IMMO : 39107-2GCC5	0725
	SL 2.0 TGDI 14MY(ULEV) +IMMO/SMK : 39107-2GCC0	0720
	SL 2.0 TGDI 15MY(ULEV) -IMMO : 39107-2GCC6/C7	7267
	SL 2.0 TGDI 15MY(ULEV) +IMMO/SMK : 39107-2GCC1/C2	7212
	SL 2.0T-GDI -IMMO 6AT 15MY (ULEV) : 39107-2GCC8	0729
	SL 2.0T-GDI +IMMO/SMK 6AT 15MY (ULEV) : 39107-2GCC3	0724
SL 2.4	SL 2.4 GDI 14MY(ULEV) -IMMO : 39107/17-2GCD5/E5	7255
	SL 2.4 GDI 14MY(ULEV) +IMMO/SMK : 39107/17-2GCD0/E0	7200
	SL 2.4 GDI 14MY(SULEV) -IMMO : 39107-2GCG5	0726
	SL 2.4 GDI 14MY(SULEV) +IMMO/SMK : 39107-2GCG0	0721
	SL 2.4 GDI 15MY(ULEV) -IMMO : 39107-2GCD6/D7/E6/E7, 39117-2GCD6/E6	7266
	SL 2.4 GDI 15MY(ULEV) +IMMO/SMK : 39107-2GCD1/D2/E1/E2, 39117-2GCD1/E1	7211
	SL 2.4 GDI 15MY(SULEV) -IMMO : 39107-2GCG6/G7	7268
	SL 2.4 GDI 15MY(SULEV) +IMMO/SMK : 39107-2GCG1/G2	7213
QF 2.0T	QF 2.0 TGDI 15MY(ULEV) -IMMO : 39108-2GBK2/K3	0823
	QF 2.0 TGDI 15MY(ULEV) +IMMO/SMK : 39108-2GBK7/K8	0828
QF 2.4	QF 2.4 GDI 15MY(ULEV) -IMMO : 39108-2GBH1/H2, 39118-2GBH1	1821
	QF 2.4 GDI 15MY(ULEV) +IMMO/SMK : 39108-2GBJ1/J2, 39118-2GBJ1	1822
	QF 2.4 GDI 15MY(SULEV) -IMMO : 39108-2GBH6/H7	0827
	QF 2.4 GDI 15MY(SULEV) +IMMO/SMK : 39108-2GBJ6/J7	0829

SUBJECT: KNOCK SENSOR DETECTION SYSTEM – ECU LOGIC IMPROVEMENT (PI1802)

Manual Mode ECU Upgrade Passwords (16MY)

Model	Menu	Password
UMa 2.4	UMA 2.4GDI -IMMO 6AT 15~16MY(2WD/ULEV) : 39100-2GGF0 [2WD_UMAFNC4EM91A/92A/A31/A51/A52]	0020
	UMA 2.4GDI +IMMO/SMK 6AT 15~16MY(2WD/ULEV) : 39100-2GGF5 [2WD_UMAFNC4ER91A/92A/A31/A51/A52]	0025
	UMA 2.4GDI -IMMO 6AT 15~16MY(4WD/ULEV) : 39100-2GGH0 [4WD_UMAFNC4EM91A/92A/A31/A51/A52]	0021
	UMA 2.4GDI +IMMO/SMK 6AT 15~16MY(4WD/ULEV) : 39100-2GGH5 [4WD_UMAFNC4ER91A/92A/A31/A51/A52]	0026
	UMA 2.4GDI -IMMO 6AT 15~16MY(2WD/ULEV) : 39100-2GGF1 [2WD_UMAFNC4EMA3A/5A/5B/5C]	0022
	UMA 2.4GDI +IMMO/SMK 6AT 15~16MY(2WD/ULEV) : 39100-2GGF6 [2WD_UMAFNC4ERA3A/5A/5B/5C]	0027
	UMA 2.4GDI -IMMO 6AT 15~16MY(4WD/ULEV) : 39100-2GGH1 [4WD_UMAFNC4EMA3A/5A/5B/5C]	0023
	UMA 2.4GDI +IMMO/SMK 6AT 15~16MY(4WD/ULEV) : 39100-2GGH6 [4WD_UMAFNC4ERA3A/5A/5B/5C]	0028
UMa 2.0T	UMA 2.0T-GDI -IMMO 6AT 15MY(2WD/ULEV) : 39100-2GTC0 [2WD_UMAFNC0EM92A/1]	2020
	UMA 2.0T-GDI +IMMO/SMK 6AT 15MY(2WD/ULEV) : 39100-2GTC5 [2WD_UMAFNC0ER92A/1]	2025
	UMA 2.0T-GDI -IMMO 6AT 15MY(4WD/ULEV) : 39100-2GTD0 [4WD_UMAFNC0EM92A/1]	2021
	UMA 2.0T-GDI +IMMO/SMK 6AT 15MY(4WD/ULEV) : 39100-2GTD5 [4WD_UMAFNC0ER92A/1]	2026
	UMA 2.0T-GDI -IMMO 6AT 16MY(2WD/ULEV) : 39100-2GTC1 [2WD_UMAGNC0EMA3A/5A/61]	2022
	UMA 2.0T-GDI +IMMO/SMK 6AT 16MY(2WD/ULEV) : 39100-2GTC6 [2WD_UMAGNC0ERA3A/5A/61]	2027
	UMA 2.0T-GDI -IMMO 6AT 16MY(4WD/ULEV) : 39100-2GTD1 [4WD_UMAGNC0EMA3A/5A/61]	2023
	UMA 2.0T-GDI +IMMO/SMK 6AT 16MY(4WD/ULEV) : 39100-2GTD6 [4WD_UMAGNC0ERA3A/5A/61]	2028
JF/JFa 2.4	JF/JFA 2.4GDI -IMMO 6AT 16MY (ULEV) : 39108-2GGC0 [JFAGNC4EMB0A/B0B/C0A/C3A]	0820
	JF/JFA 2.4GDI +IMMO/SMK 6AT 16MY (ULEV) : 39108-2GGC5 [JFAGNC4ERB0A/B0B/C0A/C3A]	0825
	JF/JFA 2.4GDI -IMMO 6AT 16MY (SULEV) : 39108-2GGD0 [JFAGNS4EMB0A/B0B/C0A/C3A]	0821
	JF/JFA 2.4GDI +IMMO/SMK 6AT 16MY (SULEV) : 39108-2GGD5 [JFAGNS4ERB0A/B0B/C0A/C3A]	0826
	JF/JFA 2.4GDI -IMMO 6AT 16MY (ULEV) : 39108-2GGC0 [JFAGNC4EMD11]	0822
	JF/JFA 2.4GDI +IMMO/SMK 6AT 16MY (ULEV) : 39108-2GGC5 [JFAGNC4ERD11]	0827
	JF/JFA 2.4GDI -IMMO 6AT 16MY (SULEV) : 39108-2GGD0 [JFAGNS4EMD11]	0823
	JF/JFA 2.4GDI +IMMO/SMK 6AT 16MY (SULEV) : 39108-2GGD5 [JFAGNS4ERD11]	0828
JFa 2.0T	JFA 2.0T-GDI -IMMO 6AT 16MY (ULEV) : 39108-2GTK0	0824
	JFA 2.0T-GDI +IMMO/SMK 6AT 16MY (ULEV) : 39108-2GTK5	0829
SL 2.4	SL 2.4GDI -IMMO 6AT/MT 16MY (ULEV) : 39107/17-2GCD8/E8	1728
	SL 2.4GDI +IMMO/SMK 6AT/MT 16MY (ULEV) : 39107/17-2GCD3/E3	1723
	SL 2.4GDI -IMMO 6AT 16MY (SULEV) : 39107-2GCG8	0728
	SL 2.4GDI +IMMO/SMK 6AT 16MY (SULEV) : 39107-2GCG3	0723

1. Within the ECU Upgrade screen displayed, select **Manual Mode**.

2. Select the **ENGINE** system under the System selection menu. Select **Upgrade Event #374 (XMa), #375 (TF), #376 (SL), #377 (QF), #392 (UMa), #393 (JF/JFa), or #394 (16MY SL)** and select **Upgrade** to continue.

3. Select the appropriate control unit part number with reference to the ROM ID Information Table on page 3-6, and select **OK**.

4. Enter the appropriate password from the Manual Mode password table above and select **OK**.

5. The upgrade will begin and the progress of the upgrade will appear on the bar graph.

6. When instructed on the KDS, turn the ignition **OFF** for ten (10) seconds then back on. Touch **OK** to continue.

7. Once the upgrade is complete, touch **OK** to finalize the procedure.

8. When prompted, select **YES** to check for Diagnostic Trouble Codes (DTC) and erase any DTCs stored such as EPS, ESC, and TPMS that may have been set during the upgrade.

9. Start the engine to confirm proper operation of the vehicle.

SUBJECT: KNOCK SENSOR DETECTION SYSTEM – ECU LOGIC IMPROVEMENT (PI1802)

AFFECTED VEHICLE RANGE:

Model	Production Date Range
14MY Optima (TF)	August 29, 2013 through April 25, 2014
15-16MY Optima (TF/QF/JF/JFa)	April 16, 2014 through October 12, 2016
14-16MY Sportage (SL)	September 30, 2013 through November 16, 2015
15-16MY Sorento (XMa/UMa)	January 3, 2014 through April 26, 2016

WARRANTY INFORMATION (PI1802A):

N Code: N99 C Code: C99

Model	Claim Type	Causal P/N	Qty.	Repair Description	Labor Op Code	Op Time	Replacement P/N	Qty.
XMa (15MY)	R	39113 2GBK1	0	(PI1802A) KSDS - ECU Logic Improvement	180A10R0	0.3 M/H	N/A	0
TF (14-15MY)	R	39108 2GBE0	0	(PI1802A) KSDS - ECU Logic Improvement	180107R0	0.3 M/H	N/A	0
QF (15MY)	R	39108 2GBH1	0	(PI1802A) KSDS - ECU Logic Improvement	180A15R0	0.3 M/H	N/A	0
SL (14-15MY)	R	39107 2GCD5	0	(PI1802A) KSDS - ECU Logic Improvement	180108R0	0.3 M/H	N/A	0

WARRANTY INFORMATION (PI1802A1):

N Code: N99 C Code: C99

Model	Claim Type	Causal P/N	Qty.	Repair Description	Labor Op Code	Op Time	Replacement P/N	Qty.
TF (14-15MY)	R	39108 2GBE0	0	(PI1802A1) KSDS - ECU Logic Improvement	180119R0	0.3 M/H	N/A	0
QF (15MY)	R	39108 2GBH1	0	(PI1802A1) KSDS - ECU Logic Improvement	180A17R0	0.3 M/H	N/A	0

SUBJECT: KNOCK SENSOR DETECTION SYSTEM – ECU LOGIC IMPROVEMENT (PI1802)

WARRANTY INFORMATION (PI1802B):

N Code: N99 C Code: C99

Model	Claim Type	Causal P/N	Qty.	Repair Description	Labor Op Code	Op Time	Replacement P/N	Qty.
SL (16MY)	R	39107 2GCD5	0	(PI1802B) KSDS - ECU Logic Improvement	180108R0	0.3 M/H	N/A	0
JF (16MY)	R	39108 2GGC5	0	(PI1802B) KSDS - ECU Logic Improvement	180109R0	0.3 M/H	N/A	0
JFa (16MY)	R	39108 2GTK5	0	(PI1802B) KSDS - ECU Logic Improvement	180A25R0	0.3 M/H	N/A	0
UMa (16MY)	R	39100 2GGF0	0	(PI1802B) KSDS - ECU Logic Improvement	180A26R0	0.3 M/H	N/A	0

★ NOTICE

VIN inquiry data for this repair is provided for tracking purposes only. Kia retailers should reference PI1802* when accessing the WebDCS system.

PE19-004

KIA

TAB 57_ PI1802_TSB_R4

	GROUP	MODEL
KIA	**Product Improvement**	**See Model List on Page 1**
	NUMBER	DATE
	1802 (Rev 4, 12/12/2018)	**July 2018**

PRODUCT IMPROVEMENT CAMPAIGN

SUBJECT: KNOCK SENSOR DETECTION SYSTEM - ECU LOGIC IMPROVEMENT (PI1802)

★ NOTICE

This bulletin has been revised to include additional information. New/revised sections of this bulletin are indicated by a black bar in the margin area.

This bulletin provides information related to a software update to the Engine Control Unit (ECU) to install the Knock Sensor Detection System (KSDS) in order to protect the engine from excessive connecting rod bearing damage. This update is for:

Year	Model	Engine	Production Date
2014	Optima (TF)	2.4L GDI	8/29/13 – 4/25/14
2015-2017	Optima (TF/QF/JF/JFa)	2.4L & 2.0T GDI	4/16/14 – 5/2/17
2014-2017	Sportage (SL/QL)	2.4L & 2.0T GDI	9/30/13 – 4/11/17
2015-2017	Sorento (XMa/UMa)	2.4L & 2.0T GDI	1/3/14 – 4/13/17

The KSDS detects vibrations indicating the onset of excessive connecting rod bearing wear. It is designed to alert the driver at an early stage of bearing wear before the occurrence of severe engine damage, including engine failure. If vibrations caused by bearing wear start to occur, the Malfunction Indicator Lamp (MIL) will blink continuously, and the vehicle will be placed in Limp Home Mode. This will reduce further damage to the engine and ensure that the vehicle occupants are not exposed to the risk of a more severe engine failure. At that time, Diagnostic Trouble Code ("DTC") P1326, specific to the KSDS, will be recorded in the ECU. The vehicle can continue to be operated for a limited time in Limp Home Mode, but it will accelerate slowly and have a reduced maximum speed. Also, engine RPMs will be limited to approximately 1800-2000 RPM.

Please note, since Kia launched this Product Improve Campaign, Kia has become aware that the KSDS software version installed on 2014-2015MY Optima vehicles before September 7, 2018 has an error and requires the installation of a new corrected software. Kia has identified all affected 2014-2015MY Optima vehicles which require the installation of the new corrected software, and these vehicles are identified under a separate campaign number, PI1802A1, in the WEBDCS.

Kia is requesting the completion of this Product Improvement Campaign on all affected vehicles. Before conducting the procedure, verify the vehicle is included in the list of affected VINs. Also, please have your KDS connected to the internet regularly to get the latest software updates available.

File Under: <Product Improvement>

Circulate To: ☒ **General Manager** ☒ **Service Manager** ☒ **Parts Manager**
☒ **Service Advisors** ☒ **Technicians** ☒ **Body Shop Manager** ☐ **Fleet Repair**

SUBJECT: KNOCK SENSOR DETECTION SYSTEM – ECU LOGIC IMPROVEMENT (PI1802)

★ NOTICE

To assure complete customer satisfaction, always remember to refer to WebDCS Warranty Coverage (validation) Inquiry Screen (Service → Warranty Coverage → Warranty Coverage Inquiry) for a list of any additional campaigns that may need to be performed on the vehicle before returning it to the customer.

ECU Upgrade Procedure:

To correct this condition, the ECU should be reprogrammed using the KDS download, as described in this bulletin.

Upgrade Event Name
374.XMa Theta 2.4GDI Knock Sensor Detection System (KSDS) ECU Upgrade
375.TF Theta 2.0/2.4GDI Knock Sensor Detection System (KSDS) ECU Upgrade
376.SL Theta 2.0/2.4GDI Knock Sensor Detection System (KSDS) ECU Upgrade
377.QF Theta 2.0/2.4GDI Knock Sensor Detection System (KSDS) ECU Upgrade
392. UMa THETA 2.0/2.4 Knock Sensor Detection System (KSDS) ECU Upgrade (16MY)
393. JF/JFa THETA 2.0/2.4 Knock Sensor Detection System (KSDS) ECU Upgrade (16MY)
394. SL THETA 2.0/2.4 Knock Sensor Detection System (KSDS) ECU Upgrade (16MY)
398. UMA THETA 2.0/2.4 Knock Sensor Detection System(KSDS) ECU UPGRADE (17MY)
399. JF/JFA THETA 2.0/2.4 Knock Sensor Detection System(KSDS) ECU UPGRADE (17MY)
400. QL THETA 2.0/2.4 Knock Sensor Detection System(KSDS) ECU UPGRADE (17MY)

★ NOTICE

- **A fully charged battery is necessary before ECU upgrade can take place. It is recommended that the Midtronics GR8-1299 system be used in ECU mode during charging. DO NOT connect any other battery charger to the vehicle during ECU upgrade.**
- **All ECU upgrades must be done with the ignition key in the 'ON' position.**
- **Be careful not to disconnect the VCI-II connected to the vehicle during the ECU upgrade procedure.**
- **DO NOT start the engine during ECU upgrade.**
- **DO NOT turn the ignition key 'OFF' or interrupt the power supply during ECU upgrade.**
- **When the ECU upgrade is completed, turn the ignition 'OFF' and wait 10 seconds before starting the engine.**
- **ONLY use approved ECU upgrade software designated for the correct model, year.**

⚠ CAUTION

Before attempting an ECU upgrade on any Kia model, make sure to first determine whether the particular model is equipped with an immobilizer security system. Failure to follow proper procedures may cause the PCM to become inoperative after the upgrade and any claims associated with this repair may be subject to chargeback.

★ NOTICE

For Optima models included in this TSB:
VINs that start with 5XX are designated Optima (QF/JFa) and produced in the United States.
VINs that start with KNA are designated Optima (TF/JF) are produced in South Korea.

SUBJECT: KNOCK SENSOR DETECTION SYSTEM – ECU LOGIC IMPROVEMENT (PI1802)

ROM ID INFORMATION TABLE:

Upgrade Event #374, #375, #376, #377, #392, #393, #394. #398, #399, #400

Model	ENG	IMMO	ECU P/No.	ROM ID	
				Previous	New
15MY Sor. (XMa)	2.4 (ULEV)	Yes	39113-2GBK6 39113-2GBK7 39113-2GBL6 39113-2GBL7	FFC4RH2A FFC4RHAA FFC4RHAB	FFC4RHAK FFC4RHAL
		No	39113-2GBK1 39113-2GBK2 39113-2GBL1 39113-2GBL2	FFC4MH2A FFC4MHAA FFC4MHAB	FFC4MHAK FFC4MHAL
14MY Opt. (TF)	2.4 (ULEV)	Yes	39108-2GBF0 39118-2GBF0	TEC4RH2K TEC4RH2L TEC4RH25	TEC4RH26
		No	39108-2GBE0 39118-2GBE0	TEC4MH2K TEC4MH2L TEC4MH25	TEC4MH26
	2.4 (SULEV)	Yes	39108-2GBF5	TES4RH2K TES4RH2L TES4RH25	TES4RH26
		No	39108-2GBE5	TES4MH2K TES4MH2L TES4MH25	TES4MH26
15MY Opt. (TF)	2.4 (ULEV)	Yes	39108-2GBF1	TFC4RH4K TFC4RH4L TFC4RH45	TFC4RH46
		No	39108-2GBE1 39118-2GBE1	TFC4MH4K TFC4MH4L TFC4MH45	TFC4MH46
	2.4 (SULEV)	No	39108-2GBE6	TFS4MH4K TFS4MH4L TFS4MH45	TFS4MH46
14MY Opt. (TF)	2.0T (ULEV)	Yes	39108-2GBG5 39108-2GBG6	TEC0RH2K TEC0RH2L TEC0RH25	TEC0RH26
		No	39108-2GBG0 39108-2GBG1	TEC0MH2K TEC0MH2L TEC0MH25	TEC0MH26
15MY Opt. (TF)	2.0T (ULEV)	Yes	39108-2GBG7	TFC0RH4K TFC0RH4L TFC0RH45	TFC0RH46
14MY Spo. (SL)	2.4 (ULEV)	Yes	39107-2GCD0 39107-2GCE0 39117-2GCD0 39117-2GCE0	SEC4RH2A SEC4RH2B SEC4RH2C SEC4RH2D	SEC4RH2K
		No	39107-2GCD5 39107-2GCE5 39117-2GCD5 39117-2GCE5	SEC4MH2A SEC4MH2B SEC4MH2C SEC4MH2D	SEC4MH2K
	2.4 (SULEV)	Yes	39107-2GCG0	SES4RH2A SES4RH2B SES4RH2C SES4RH2D	SES4RH2K

SUBJECT: KNOCK SENSOR DETECTION SYSTEM – ECU LOGIC IMPROVEMENT (PI1802)

Model	ENG	IMMO	ECU P/No.	ROM ID	
				Previous	New
14MY Spo. (SL)	2.4 (SULEV)	Yes	39107-2GCG0	SES4RH2A SES4RH2B SES4RH2C SES4RH2D	SES4RH2K
		No	39107-2GCG5	SES4MH2A SES4MH2B SES4MH2C SES4MH2D	SES4MH2K
15MY Spo. (SL)	2.4 (ULEV)	Yes	39107-2GCD1 39107-2GCD2 39107-2GCE1 39107-2GCE2 39117-2GCD1 39117-2GCE1	SFC4RH4A SFC4RH4B	SFC4RH4K
		No	39107-2GCD6 39107-2GCD7 39107-2GCE6 39107-2GCE7 39117-2GCD6 39117-2GCE6	SFC4MH4A SFC4MH4B	SFC4MH4K
	2.4 (SULEV)	Yes	39107-2GCG1 39107-2GCG2	SFS4RH4A SFS4RH4B	SFS4RH4K
		No	39107-2GCG6 39107-2GCG7	SFS4MH4A SFS4MH4B	SFS4MH4K
14MY Spo. (SL)	2.0T (ULEV)	Yes	39107-2GCC0	SEC0RH2A	SEC0RH2K
		No	39107-2GCC5	SEC0MH2A	SEC0MH2K
	2.0T (ULEV)	Yes	39107-2GCC1 39107-2GCC2	SFC0RH4A	SFC0RH4K
		No	39107-2GCC6 39107-2GCC7	SFC0MH4A	SFC0MH4K
15MY Spo. (SL)	2.0T (ULEV)	Yes	39107-2GCC3	SGC0RH4A	SGC0RH4K
		No	39107-2GCC8	SGC0MH4A	SGC0MH4K
15MY Opt. (QF)	2.4 (ULEV)	Yes	39108-2GBJ1 39108-2GBJ2 39118-2GBJ1	TFC4RH4A TFC4RH4B TFC4RH41	TFC4RH42
		No	39108-2GBH1 39108-2GBH2 39118-2GBH1	TFC4MH4A TFC4MH4B TFC4MH41	TFC4MH42
	2.4 (SULEV)	Yes	39108-2GBJ6 39108-2GBJ7	TFS4RH4A TFS4RH4B TFS4RH41	TFS4RH42
		No	39108-2GBH6 39108-2GBH7	TFS4MH4A TFS4MH4B TFS4MH41	TFS4MH42
15MY Opt. (QF)	2.0T (ULEV)	Yes	39108-2GBK7 39108-2GBK8	TFC0RH4A TFC0RH4B TFC0RH41	TFC0RH42
		No	39108-2GBK2 39108-2GBK3	TFC0MH4A TFC0MH4B TFC0MH41	TFC0MH42

SUBJECT: KNOCK SENSOR DETECTION SYSTEM – ECU LOGIC IMPROVEMENT (PI1802)

Model	ENG	IMMO	ECU P/No.	ROM ID	
				Previous	New
16MY Sor. (UMa) 2WD	2.4 (ULEV)	Yes	39100-2GGF5	2WD_UMAFNC4ER91A 2WD_UMAFNC4ER92A 2WD_UMAGNC4ERA31 2WD_UMAFNC4ERA51 2WD_UMAFNC4ERA52	2WD_UMAFNC4ERA6K
			39100-2GGF6	2WD_UMAFNC4ERA3A 2WD_UMAFNC4ERA5A 2WD_UMAFNC4ERA5B 2WD_UMAFNC4ERA5C	2WD_UMAFNC4ERA6M
			39100-2GGF6	2WD_UMAHNC4ERA6B	2WD_UMAHNC4ERA6K
		No	39100-2GGF0	2WD_UMAFNC4EM91A 2WD_UMAFNC4EM92A 2WD_UMAGNC4EMA31 2WD_UMAFNC4EMA51 2WD_UMAFNC4EMA52	2WD_UMAFNC4EMA6K
			39100-2GGF1	2WD_UMAFNC4EMA3A 2WD_UMAFNC4EMA5A 2WD_UMAFNC4EMA5B 2WD_UMAFNC4EMA5C	2WD_UMAFNC4EMA6M
			39100-2GGF1	2WD_UMAHNC4EMA6B	2WD_UMAHNC4EMA6K
16MY Sor. (UMa) 4WD	2.4 (ULEV)	Yes	39100-2GGH5	4WD_UMAFNC4ER91A 4WD_UMAFNC4ER92A 4WD_UMAGNC4ERA31 4WD_UMAFNC4ERA51 4WD_UMAFNC4ERA52	4WD_UMAFNC4ERA6O
			39100-2GGH6	4WD_UMAFNC4ERA3A 4WD_UMAFNC4ERA5A 4WD_UMAFNC4ERA5B 4WD_UMAFNC4ERA5C	4WD_UMAFNC4ERA6P
			39100-2GGH6	4WD_UMAHNC4ERA6B	4WD_UMAHNC4ERA6L
		No	39100-2GGH0	4WD_UMAFNC4EM91A 4WD_UMAFNC4EM92A 4WD_UMAGNC4EMA31 4WD_UMAFNC4EMA51 4WD_UMAFNC4EMA52	4WD_UMAFNC4EMA6O
			39100-2GGH1	4WD_UMAFNC4EMA3A 4WD_UMAFNC4EMA5A 4WD_UMAFNC4EMA5B 4WD_UMAFNC4EMA5C	4WD_UMAFNC4EMA6P
			39100-2GGH1	4WD_UMAHNC4EMA6B	4WD_UMAHNC4EMA6L
16MY Sor. (UMa) 2WD	2.0T (ULEV)	Yes	39100-2GTC6	2WD_UMAGNC0ERA3A 2WD_UMAGNC0ERA5A 2WD_UMAGNC0ERA61	2WD_UMAGNC0ERA6K
		No	39100-2GTC1	2WD_UMAGNC0EMA3A 2WD_UMAGNC0EMA5A 2WD_UMAGNC0EMA61	2WD_UMAGNC0EMA6K
16MY Sor. (UMa) 4WD	2.0T (ULEV)	Yes	39100-2GTD6	4WD_UMAGNC0ERA3A 4WD_UMAGNC0ERA5A 4WD_UMAGNC0ERA61	4WD_UMAGNC0ERA6L
		No	39100-2GTD1	4WD_UMAGNC0EMA3A 4WD_UMAGNC0EMA5A 4WD_UMAGNC0EMA61	4WD_UMAGNC0EMA6L

SUBJECT: KNOCK SENSOR DETECTION SYSTEM – ECU LOGIC IMPROVEMENT (PI1802)

Model	ENG	IMMO	ECU P/No.	ROM ID	
				Previous	New
16MY Opt. (JF/JFa)	2.4 (ULEV)	Yes	39108-2GGC5	JFAGNC4ERB0A JFAGNC4ERB0B JFAGNC4ERC0A JFAGNC4ERC3A	JFAGNC4ERC3K
			39108-2GGC5	JFAGNC4ERD11	JFAGNC4ERD1K
		No	39108-2GGC0	JFAGNC4EMB0A JFAGNC4EMB0B JFAGNC4EMC0A JFAGNC4EMC3A	JFAGNC4EMC3K
			39108-2GGC0	JFAGNC4EMD11	JFAGNC4EMD1K
	2.4 (SULEV)	Yes	39108-2GGD5	JFAGNS4ERB0A JFAGNS4ERB0B JFAGNS4ERC0A JFAGNS4ERC3A	JFAGNS4ERC3K
			39108-2GGD5	JFAGNS4ERD11	JFAGNS4ERD1K
		No	39108-2GGD0	JFAGNS4EMB0A JFAGNS4EMB0B JFAGNS4EMC0A JFAGNS4EMC3A	JFAGNS4EMC3K
			39108-2GGD0	JFAGNS4EMD11	JFAGNS4EMD1K
16MY Opt. (JFa)	2.0T (ULEV)	Yes	39108-2GTK5	JFAGNC0ERB0A JFAGNC0ERB0B JFAGNC0ERB4A	JFAGNC0ERB4K
		No	39108-2GTK0	JFAGNC0EMB0A JFAGNC0EMB0B JFAGNC0EMB4A	JFAGNC0EMB4K
16MY Spo. (SL)	2.4 (ULEV)	Yes	39107-2GCD3 39107-2GCE3 39117-2GCD3 39117-2GCE3	SGC4RH4A SGC4RH4B	SGC4RH4K
		No	39107-2GCD8 39107-2GCE8 39117-2GCD8 39117-2GCE8	SGC4MH4A SGC4MH4B	SGC4MH4K
	2.4 (SULEV)	Yes	39107-2GCG3	SGS4RH4A SGS4RH4B	SGS4RH4K
		No	39107-2GCG8	SGS4MH4A SGS4MH4B	SGS4MH4K

SUBJECT: KNOCK SENSOR DETECTION SYSTEM – ECU LOGIC IMPROVEMENT (PI1802)

Model	ENG	IMMO	ECU P/No.	ROM ID	
				Previous	New
17MY Sor. (UMa) 2WD	2.4 (ULEV)	Yes	39100-2GGF7	UMAHNC4ERA5A UMAHNC4ERA5B UMAHNC4ERA6A UMAHNC4ERA6B	UMAHNC4ERA6K
		No	39100-2GGF2	UMAHNC4EMA5A UMAHNC4EMA5B UMAHNC4EMA6A UMAHNC4EMA6B	UMAHNC4EMA6K
17MY Sor. (UMa) 4WD	2.4 (ULEV)	Yes	39100-2GGH7	UMAHNC4ERA5A UMAHNC4ERA5B UMAHNC4ERA6A UMAHNC4ERA6B	UMAHNC4ERA6L
		No	39100-2GGH2	UMAHNC4EMA5A UMAHNC4EMA5B UMAHNC4EMA6A UMAHNC4EMA6B	UMAHNC4EMA6L
17MY Sor. (UMa) 2WD	2.0T (ULEV)	Yes	39100-2GTC7	UMAHNC0ERA5A UMAHNC0ERA6A UMAHNC0ERA6B	UMAHNC0ERA6K
		No	39100-2GTC2	UMAHNC0EMA5A UMAHNC0EMA6A UMAHNC0EMA6B	UMAHNC0EMA6K
17MY Sor. (UMa) 4WD	2.0T (ULEV)	Yes	39100-2GTD7	UMAHNC0ERA5A UMAHNC0ERA6A UMAHNC0ERA6B	UMAHNC0ERA6L
		No	39100-2GTD2	UMAHNC0EMA5A UMAHNC0EMA6A UMAHNC0EMA6B	UMAHNC0EMA6L
17MY Opt. (JF/JFa)	2.4 (ULEV)	Yes	39108-2GGC6	JFAHNC4ERC3A JFAHNC4ERC3B	JFAHNC4ERC31
			39108-2GGC8	JFAHNC4ERD1A	JFAHNC4ERD11
		No	39108-2GGC1	JFAHNC4EMC3A JFAHNC4EMC3B	JFAHNC4EMC31
			39108-2GGC3	JFAHNC4EMD1A	JFAHNC4EMD11
			39108-2GGL1	JFAHNC4EMC3K JFAHNC4EMC3L	JFAHNC4EMC35
			39108-2GGL2	JFAHNC4EMD1K	JFAHNC4EMD15
	2.4 (SULEV)	Yes	39108-2GGD6	JFAHNS4ERC3A JFAHNS4ERC3B	JFAHNS4ERC31
			39108-2GGD8	JFAHNS4ERD1A	JFAHNS4ERD11
		No	39108-2GGD1	JFAHNS4EMC3A JFAHNS4EMC3B	JFAHNS4EMC31
			39108-2GGD3	JFAHNS4EMD1A	JFAHNS4EMD11
			39108-2GGM1	JFAHNS4EMC3K JFAHNS4EMC3L	JFAHNS4EMC35
			39108-2GGM2	JFAHNS4EMD1K	JFAHNS4EMD15

SUBJECT: KNOCK SENSOR DETECTION SYSTEM – ECU LOGIC IMPROVEMENT (PI1802)

Model	ENG	IMMO	ECU P/No.	ROM ID	
				Previous	New
17MY Opt. (JFa)	2.0T (ULEV)	Yes	39108-2GTK6	JFAHNC0ERC3A JFAHNC0ERC3B	JFAHNC0ERC3K
		No	39108-2GTK1	JFAHNC0EMC3A JFAHNC0EMC3B	JFAHNC0EMC3K
17MY Spo. (QL) 2WD	2.4 (ULEV)	Yes	39100-2GHR5	QLDHNC4ERB2A QLDHNC4ERB4A QLDHNC4ERB4B	QLDHNC4ERB41
		No	39100-2GHS0	QLDHNC4EMB2A QLDHNC4EMB4A QLDHNC4EMB4B	QLDHNC4EMB41
	2.4 (SULEV)	Yes	39100-2GHT5	QLDHNS4ERB2A QLDHNS4ERB4A QLDHNS4ERB4B	QLDHNS4ERB41
		No	39100-2GHV0	QLDHNS4EMB2A QLDHNS4EMB4A QLDHNS4EMB4B	QLDHNS4EMB41
17MY Spo. (QL) 4WD	2.4 (ULEV)	Yes	39100-2GHS5	QLDHNC4ERB2K QLDHNC4ERB4K QLDHNC4ERB4L	QLDHNC4ERB45
		No	39100-2GHT0	QLDHNC4EMB2K QLDHNC4EMB4K QLDHNC4EMB4L	QLDHNC4EMB45
	2.4 (SULEV)	Yes	39100-2GHV5	QLDHNS4ERB2K QLDHNS4ERB4K QLDHNS4ERB4L	QLDHNS4ERB45
		No	39100-2GHW0	QLDHNS4EMB2K QLDHNS4EMB4K QLDHNS4EMB4L	QLDHNS4EMB45
17MY Spo. (QL) 2WD	2.0T (ULEV)	Yes	39100-2GHJ0	QLDGNC0ERB2A QLDHNC0ERB4A QLDHNC0ERB4B QLDHNC0ERB4C	QLDHNC0ERB41
		No	39100-2GHJ5	QLDGNC0EMB2A QLDHNC0EMB4A QLDHNC0EMB4B QLDHNC0EMB4C	QLDHNC0EMB41
17MY Spo. (QL) 4WD	2.0T (ULEV)	Yes	39100-2GHK0	QLDGNC0ERB2K QLDHNC0ERB4K QLDHNC0ERB4L QLDHNC0ERB4M	QLDHNC0ERB45
		No	39100-2GHK5	QLDGNC0EMB2K QLDHNC0EMB4K QLDHNC0EMB4L QLDHNC0EMB4M	QLDHNC0EMB45

To verify the vehicle is affected, be sure to check the Calibration Identification of the vehicle's ECM ROM ID and reference the Information Table as necessary.

SUBJECT: KNOCK SENSOR DETECTION SYSTEM – ECU LOGIC IMPROVEMENT (PI1802)

★ NOTICE

Prior to performing the ECU upgrade, be sure to check that the KDS is fully charged.

1. Connect the VCI-II to the OBD-II connector, located under the driver's side of the instrument panel.



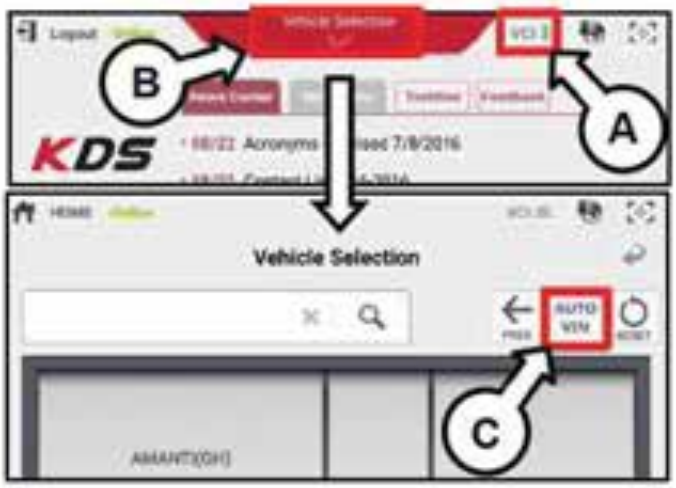
★ NOTICE

The ECU upgrade function on KDS operates wirelessly. It is not necessary to perform the upgrade via USB cable.

2. With the ignition ON, turn ON the KDS tablet. Select **KDS** from the home screen.



3. Confirm communication with VCI (A) and then configure the vehicle (B) using the **AUTO VIN** (C) feature.



4. Select **ECU Upgrade**.



5. The KDS will check the server for recently uploaded Events and then automatically download **Upgrade Event #374 (XMa), #375 (TF), #376 (SL), #377 (QF), #392 (16MY UMa), #393 (16MY JF/JFa), #394 (16MY SL), #398 (17MY UMa), #399 (17MY JF/JFa), or #400 (17MY QL).**

★ NOTICE

The vehicle must be identified in Vehicle Selection to download an Event for that vehicle.



KDS screenshot shown above is for demonstration purposes only. Events shown in screenshot are not applicable to this bulletin.

6. Select **Auto Mode**.

★ NOTICE

Do NOT attempt to perform a Manual Mode upgrade <u>UNLESS Auto Mode fails</u>. Always follow the instructions given on the KDS in either Auto or Manual mode.



7. Select the **ENGINE** system under the System selection menu.

   Touch **ID Check** (D) and confirm that the latest update is available.

   Select **Upgrade Event #374 (XMa), #375 (TF), #376 (SL), #377 (QF), #392 (16MY UMa), #393 (16MY JF/JFa), #394 (16MY SL), #398 (17MY UMa), #399 (17MY JF/JFa), or #400 (17MY QL)** and select **Upgrade** to continue.

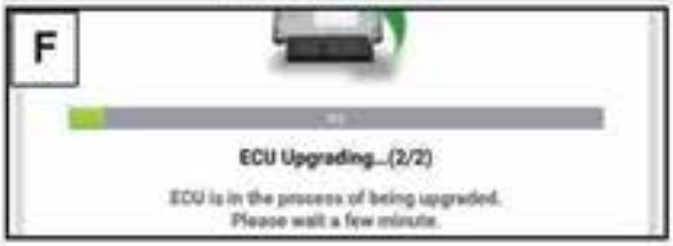


8. The ECU upgrade will begin and the progress of the upgrade will appear on the bar graph. Upgrade part (1/2) (E) will download the upgrade event to the VCI-II. Upgrade part (2/2) (F) will upgrade the ECU.

★ NOTICE

Do not touch the system buttons (like 'Back', 'Home', 'etc.') while performing ECU Upgrade.





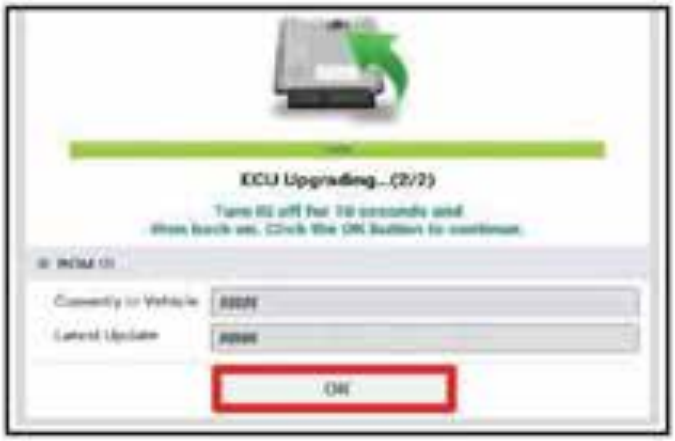
9. If a "Communication Fail" screen appears, verify that the VCI-II and KDS are communicating properly. Touch **OK** and restart the procedure from step 4.



★ NOTICE

If an error notice continues to appear or if the upgrade cannot be performed, DO NOT disconnect the KDS/VCI-II. Contact GIT America Help Desk at (888) 542-4371 or Techline.

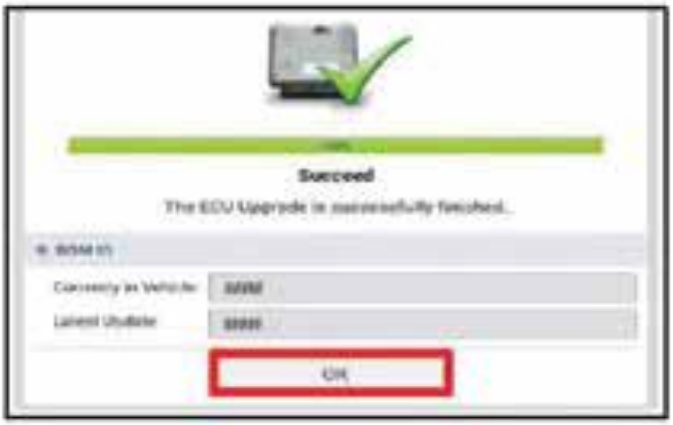
10. When instructed on the KDS, turn the ignition **OFF** for ten (10) seconds then back on. Touch **OK** to continue.



★ NOTICE

If applicable and instructed on the KDS, leave the ignition ON for five (5) seconds to perform ETC Adaptive Learning.

11. Once the upgrade is complete, touch **OK** to finalize the procedure.



12. When prompted, select **YES** to check for Diagnostic Trouble Codes (DTC) and erase any DTCs stored such as EPS, ESC, and TPMS that may have been set during the upgrade.



13. Start the engine to confirm proper operation of the vehicle.

SUBJECT: KNOCK SENSOR DETECTION SYSTEM – ECU LOGIC IMPROVEMENT (PI1802)

Manual Upgrade Procedure:

★ NOTICE

The manual upgrade should ONLY be performed if the automatic upgrade fails.

If the automatic upgrade fails, turn the ignition OFF for about 10 seconds then place it back in the ON position to reset the control unit BEFORE performing manual upgrade.

See table below for Manual Mode passwords.

Manual Mode ECU Upgrade Passwords (14-15MY)

Model	Menu	Password
XMa 2.4	XMA 2.4GDI -IMMO : 39113-2GBK1/K2/L1/L2	1322
	XMA 2.4GDI +IMMO/SMK : 39113-2GBK8/K7/L6/L7	1327
TF 2.0T	TF F/L 2.0 TGDI 14MY(ULEV) -IMMO : 39108-2GBG0/G1	8201
	TF F/L 2.0 TGDI 14MY(ULEV) +IMMO/SMK : 39108-2GBG5/G6	8256
	TF F/L 2.0 TGDI 15MY(ULEV) +IMMO/SMK : 39108-2GBG7	0827
TF 2.4	TF F/L 2.4 GDI 14MY(ULEV) -IMMO : 39108/18-2GBE0	1820
	TF F/L 2.4 GDI 14MY(ULEV) +IMMO/SMK : 39108/18-2GBF0	1821
	TF F/L 2.4 GDI 14MY(SULEV) -IMMO : 39108-2GBE5	0828
	TF F/L 2.4 GDI 14MY(SULEV) +IMMO/SMK : 39108-2GBF5	0829
	TF F/L 2.4 GDI 15MY(ULEV) -IMMO : 39108/18-2GBE1	1822
	TF F/L 2.4 GDI 15MY(ULEV) +IMMO/SMK : 39108-2GBF1	0821
	TF F/L 2.4 GDI 15MY(SULEV) -IMMO : 39108-2GBE6	0826
SL 2.0T	SL 2.0 TGDI 14MY(ULEV) -IMMO : 39107-2GCC5	0725
	SL 2.0 TGDI 14MY(ULEV) +IMMO/SMK : 39107-2GCC0	0720
	SL 2.0 TGDI 15MY(ULEV) -IMMO : 39107-2GCC6/C7	7267
	SL 2.0 TGDI 15MY(ULEV) +IMMO/SMK : 39107-2GCC1/C2	7212
	SL 2.0T-GDI -IMMO 6AT 15MY (ULEV) : 39107-2GCC8	0729
	SL 2.0T-GDI +IMMO/SMK 6AT 15MY (ULEV) : 39107-2GCC3	0724
SL 2.4	SL 2.4 GDI 14MY(ULEV) -IMMO : 39107/17-2GCD5/E5	7255
	SL 2.4 GDI 14MY(ULEV) +IMMO/SMK : 39107/17-2GCD0/E0	7200
	SL 2.4 GDI 14MY(SULEV) -IMMO : 39107-2GCG5	0726
	SL 2.4 GDI 14MY(SULEV) +IMMO/SMK : 39107-2GCG0	0721
	SL 2.4 GDI 15MY(ULEV) -IMMO : 39107-2GCD6/D7/E6/E7, 39117-2GCD6/E6	7266
	SL 2.4 GDI 15MY(ULEV) +IMMO/SMK : 39107-2GCD1/D2/E1/E2, 39117-2GCD1/E1	7211
	SL 2.4 GDI 15MY(SULEV) -IMMO : 39107-2GCG6/G7	7268
	SL 2.4 GDI 15MY(SULEV) +IMMO/SMK : 39107-2GCG1/G2	7213
QF 2.0T	QF 2.0 TGDI 15MY(ULEV) -IMMO : 39108-2GBK2/K3	0823
	QF 2.0 TGDI 15MY(ULEV) +IMMO/SMK : 39108-2GBK7/K8	0828
QF 2.4	QF 2.4 GDI 15MY(ULEV) -IMMO : 39108-2GBH1/H2, 39118-2GBH1	1821
	QF 2.4 GDI 15MY(ULEV) +IMMO/SMK : 39108-2GBJ1/J2, 39118-2GBJ1	1822
	QF 2.4 GDI 15MY(SULEV) -IMMO : 39108-2GBH6/H7	0827
	QF 2.4 GDI 15MY(SULEV) +IMMO/SMK : 39108-2GBJ6/J7	0829

SUBJECT: KNOCK SENSOR DETECTION SYSTEM – ECU LOGIC IMPROVEMENT (PI1802)

Manual Mode ECU Upgrade Passwords (16MY)

Model	Menu	Password
UMa 2.4	UMA 2.4GDI -IMMO 6AT 15~16MY(2WD/ULEV) : 39100-2GGF0 [2WD_UMAFNC4EM91A/92A/A31/A51/A52]	0020
	UMA 2.4GDI +IMMO/SMK 6AT 15~16MY(2WD/ULEV) : 39100-2GGF5 [2WD_UMAFNC4ER91A/92A/A31/A51/A52]	0025
	UMA 2.4GDI -IMMO 6AT 15~16MY(4WD/ULEV) : 39100-2GGH0 [4WD_UMAFNC4EM91A/92A/A31/A51/A52]	0021
	UMA 2.4GDI +IMMO/SMK 6AT 15~16MY(4WD/ULEV) : 39100-2GGH5 [4WD_UMAFNC4ER91A/92A/A31/A51/A52]	0026
	UMA 2.4GDI -IMMO 6AT 15~16MY(2WD/ULEV) : 39100-2GGF1 [2WD_UMAFNC4EMA3A/5A/5B/5C]	0022
	UMA 2.4GDI +IMMO/SMK 6AT 15~16MY(2WD/ULEV) : 39100-2GGF6 [2WD_UMAFNC4ERA3A/5A/5B/5C]	0027
	UMA 2.4GDI -IMMO 6AT 15~16MY(4WD/ULEV) : 39100-2GGH1 [4WD_UMAFNC4EMA3A/5A/5B/5C]	0023
	UMA 2.4GDI +IMMO/SMK 6AT 15~16MY(4WD/ULEV) : 39100-2GGH6 [4WD_UMAFNC4ERA3A/5A/5B/5C]	0028
	UMA 2.4 GDI 6AT -IMMO 15~16MY (2WD/ULEV) : 39100-2GGF1 [2WD_UMAHNC4EMA6B]	3981
	UMA 2.4 GDI 6AT +IMMO/SMK 15~16MY (2WD/ULEV) : 39100-2GGF6 [2WD_UMAHNC4ERA6B]	3982
	UMA 2.4 GDI 6AT -IMMO 15~16MY (4WD/ULEV) : 39100-2GGH1 [4WD_UMAHNC4EMA6B]	3983
	UMA 2.4 GDI 6AT +IMMO/SMK 15~16MY (4WD/ULEV) : 39100-2GGH6 [4WD_UMAHNC4ERA6B]	3984
UMa 2.0T	UMA 2.0T-GDI -IMMO 6AT 15MY(2WD/ULEV) : 39100-2GTC0 [2WD_UMAFNC0EM92A/1]	2020
	UMA 2.0T-GDI +IMMO/SMK 6AT 15MY(2WD/ULEV) : 39100-2GTC5 [2WD_UMAFNC0ER92A/1]	2025
	UMA 2.0T-GDI -IMMO 6AT 15MY(4WD/ULEV) : 39100-2GTD0 [4WD_UMAFNC0EM92A/1]	2021
	UMA 2.0T-GDI +IMMO/SMK 6AT 15MY(4WD/ULEV) : 39100-2GTD5 [4WD_UMAFNC0ER92A/1]	2026
	UMA 2.0T-GDI -IMMO 6AT 16MY(2WD/ULEV) : 39100-2GTC1 [2WD_UMAGNC0EMA3A/5A/61]	2022
	UMA 2.0T-GDI +IMMO/SMK 6AT 16MY(2WD/ULEV) : 39100-2GTC6 [2WD_UMAGNC0ERA3A/5A/61]	2027
	UMA 2.0T-GDI -IMMO 6AT 16MY(4WD/ULEV) : 39100-2GTD1 [4WD_UMAGNC0EMA3A/5A/61]	2023
	UMA 2.0T-GDI +IMMO/SMK 6AT 16MY(4WD/ULEV) : 39100-2GTD6 [4WD_UMAGNC0ERA3A/5A/61]	2028
JF/JFa 2.4	JF/JFA 2.4GDI -IMMO 6AT 16MY (ULEV) : 39108-2GGC0 [JFAGNC4EMB0A/B0B/C0A/C3A]	0820
	JF/JFA 2.4GDI +IMMO/SMK 6AT 16MY (ULEV) : 39108-2GGC5 [JFAGNC4ERB0A/B0B/C0A/C3A]	0825
	JF/JFA 2.4GDI -IMMO 6AT 16MY (SULEV) : 39108-2GGD0 [JFAGNS4EMB0A/B0B/C0A/C3A]	0821
	JF/JFA 2.4GDI +IMMO/SMK 6AT 16MY (SULEV) : 39108-2GGD5 [JFAGNS4ERB0A/B0B/C0A/C3A]	0826
	JF/JFA 2.4GDI -IMMO 6AT 16MY (ULEV) : 39108-2GGC0 [JFAGNC4EMD11]	0822
	JF/JFA 2.4GDI +IMMO/SMK 6AT 16MY (ULEV) : 39108-2GGC5 [JFAGNC4ERD11]	0827
	JF/JFA 2.4GDI -IMMO 6AT 16MY (SULEV) : 39108-2GGD0 [JFAGNS4EMD11]	0823
	JF/JFA 2.4GDI +IMMO/SMK 6AT 16MY (SULEV) : 39108-2GGD5 [JFAGNS4ERD11]	0828
JFa 2.0T	JFA 2.0T-GDI -IMMO 6AT 16MY (ULEV) : 39108-2GTK0	0824
	JFA 2.0T-GDI +IMMO/SMK 6AT 16MY (ULEV) : 39108-2GTK5	0829
SL 2.4	SL 2.4GDI -IMMO 6AT/MT 16MY (ULEV) : 39107/17-2GCD8/E8	1728
	SL 2.4GDI +IMMO/SMK 6AT/MT 16MY (ULEV) : 39107/17-2GCD3/E3	1723
	SL 2.4GDI -IMMO 6AT 16MY (SULEV) : 39107-2GCG8	0728
	SL 2.4GDI +IMMO/SMK 6AT 16MY (SULEV) : 39107-2GCG3	0723

SUBJECT: KNOCK SENSOR DETECTION SYSTEM – ECU LOGIC IMPROVEMENT (PI1802)

Manual Mode ECU Upgrade Passwords (17MY)

Model	Menu	Password
UMa 2.4	UMA 2.4 GDI 6AT -IMMO 17MY (2WD/ULEV) : 39100-2GGF2 [2WD_UMAHNC4EMA5A/A5B/A6A/A6B]	0022
	UMA 2.4 GDI 6AT +IMMO/SMK 17MY (2WD/ULEV) : 39100-2GGF7 [2WD_UMAHNC4ERA5A/A5B/A6A/A6B]	0027
	UMA 2.4 GDI 6AT -IMMO 17MY (4WD/ULEV) : 39100-2GGH2 [4WD_UMAHNC4EMA5A/A5B/A6A/A6B]	0023
	UMA 2.4 GDI 6AT +IMMO/SMK 17MY (4WD/ULEV) : 39100-2GGH7 [4WD_UMAHNC4ERA5A/A5B/A6A/A6B]	0028
UMa 2.0T	UMA 2.0T-GDI 6AT -IMMO 17MY (2WD/ULEV) : 39100-2GTC2 [2WD_UMAHNC0EMA5A/A6A/A6B]	0024
	UMA 2.0T-GDI 6AT +IMMO/SMK 17MY (2WD/ULEV) : 39100-2GTC7 [2WD_UMAHNC0ERA5A/A6A/A6B]	0029
	UMA 2.0T-GDI 6AT -IMMO 17MY (4WD/ULEV) : 39100-2GTD2 [4WD_UMAHNC0EMA5A/A6A/A6B]	0025
	UMA 2.0T-GDI 6AT +IMMO/SMK 17MY (4WD/ULEV) : 39100-2GTD7 [4WD_UMAHNC0ERA5A/A6A/A6B]	0030
JF/JFa 2.4	JF/JFA 2.4 GDI 6AT -IMMO 17MY (ULEV) : 39108-2GGC1	0821
	JF/JFA 2.4 GDI 6AT +IMMO/SMK 17MY (ULEV) : 39108-2GGC6	0826
	JF/JFA 2.4 GDI 6AT -IMMO 17MY (ULEV) : 39108-2GGC3	0823
	JF/JFA 2.4 GDI 6AT +IMMO/SMK 17MY (ULEV) : 39108-2GGC8	0828
	JF/JFA 2.4 GDI 6AT -IMMO 17MY (ULEV) : 39108-2GGL1	0824
	JF/JFA 2.4 GDI 6AT +IMMO/SMK 17MY (SULEV) : 39108-2GGD6	0825
	JF/JFA 2.4 GDI 6AT -IMMO 17MY (ULEV) : 39108-2GGL2	0822
	JF/JFA 2.4 GDI 6AT +IMMO/SMK 17MY (SULEV) : 39108-2GGD8	0827
	JF/JFA 2.4 GDI 6AT -IMMO 17MY (SULEV) : 39108-2GGD1	0829
	JF/JFA 2.4 GDI 6AT -IMMO 17MY (SULEV) : 39108-2GGD3	0830
	JF/JFA 2.4 GDI 6AT -IMMO 17MY (SULEV) : 39108-2GGM1	0831
	JF/JFA 2.4 GDI 6AT -IMMO 17MY (SULEV) : 39108-2GGM2	0832
JFa 2.0T	JFA 2.0T-GDI 6AT -IMMO 17MY (ULEV) : 39108-2GTK1	0833
	JFA 2.0T-GDI 6AT +IMMO/SMK 17MY (ULEV) : 39108-2GTK6	0834
QL 2.4	QL 2.4 GDI 6AT -IMMO 17MY (2WD/ULEV) : 39100-2GHS0	0020
	QL 2.4 GDI 6AT +IMMO/SMK 17MY (2WD/ULEV) : 39100-2GHR5	0025
	QL 2.4 GDI 6AT -IMMO 17MY (4WD/ULEV) : 39100-2GHT0	0021
	QL 2.4 GDI 6AT +IMMO/SMK 17MY (4WD/ULEV) : 39100-2GHS5	0026
	QL 2.4 GDI 6AT -IMMO 17MY (2WD/SULEV) : 39100-2GHV0	0022
	QL 2.4 GDI 6AT +IMMO/SMK 17MY (2WD/SULEV) : 39100-2GHT5	0027
	QL 2.4 GDI 6AT -IMMO 17MY (4WD/SULEV) : 39100-2GHW0	0023
	QL 2.4 GDI 6AT +IMMO/SMK 17MY (4WD/SULEV) : 39100-2GHV5	0028
QL 2.0T	QL 2.0T-GDI 6AT -IMMO 17MY (2WD/ULEV) : 39100-2GHJ5	0024
	QL 2.0T-GDI 6AT +IMMO/SMK 17MY (2WD/ULEV) : 39100-2GHJ0	0029
	QL 2.0T-GDI 6AT -IMMO 17MY (4WD/ULEV) : 39100-2GHK5	0030
	QL 2.0T-GDI 6AT +IMMO/SMK 17MY (4WD/ULEV) : 39100-2GHK0	0031

1. Within the ECU Upgrade screen displayed, select **Manual Mode**.

2. Select the **ENGINE** system under the System selection menu. Select **Upgrade Event #374 (XMa), #375 (TF), #376 (SL), #377 (QF), #392 (16MY UMa), #393 (16MY JF/JFa), #394 (16MY SL), #398 (17MY UMa), #399 (17MY JF/JFa), or #400 (17MY QL)** and select **Upgrade** to continue.

3. Select the appropriate control unit part number with reference to the ROM ID Information Table on page 3-6, and select **OK**.

4. Enter the appropriate password from the Manual Mode password table above and select **OK**.

5. The upgrade will begin and the progress of the upgrade will appear on the bar graph.

6. When instructed on the KDS, turn the ignition **OFF** for ten (10) seconds then back on. Touch **OK** to continue.

7. Once the upgrade is complete, touch **OK** to finalize the procedure.

8. When prompted, select **YES** to check for Diagnostic Trouble Codes (DTC) and erase any DTCs stored such as EPS, ESC, and TPMS that may have been set during the upgrade.

9. Start the engine to confirm proper operation of the vehicle.

SUBJECT: KNOCK SENSOR DETECTION SYSTEM – ECU LOGIC IMPROVEMENT (PI1802)

AFFECTED VEHICLE RANGE:

Model	Production Date Range
14MY Optima (TF)	August 29, 2013 through April 25, 2014
15-17MY Optima (TF/QF/JF/JFa)	April 16, 2014 through May 2, 2017
14-17MY Sportage (SL/QL)	September 30, 2013 through April 11, 2017
15-17MY Sorento (XMa/UMa)	January 3, 2014 through April 13, 2017

WARRANTY INFORMATION (PI1802A):

N Code: N99 C Code: C99

Model	Claim Type	Causal P/N	Qty.	Repair Description	Labor Op Code	Op Time	Replacement P/N	Qty.
XMa (15MY)	R	39113 2GBK1	0	(PI1802A) KSDS - ECU Logic Improvement	180A10R0	0.3 M/H	N/A	0
TF (14-15MY)	R	39108 2GBE0	0	(PI1802A) KSDS - ECU Logic Improvement	180107R0	0.3 M/H	N/A	0
QF (15MY)	R	39108 2GBH1	0	(PI1802A) KSDS - ECU Logic Improvement	180A15R0	0.3 M/H	N/A	0
SL (14-15MY)	R	39107 2GCD5	0	(PI1802A) KSDS - ECU Logic Improvement	180108R0	0.3 M/H	N/A	0

WARRANTY INFORMATION (PI1802A1):

N Code: N99 C Code: C99

Model	Claim Type	Causal P/N	Qty.	Repair Description	Labor Op Code	Op Time	Replacement P/N	Qty.
TF (14-15MY)	R	39108 2GBE0	0	(PI1802A1) KSDS - ECU Logic Improvement	180119R0	0.3 M/H	N/A	0
QF (15MY)	R	39108 2GBH1	0	(PI1802A1) KSDS - ECU Logic Improvement	180A17R0	0.3 M/H	N/A	0

SUBJECT: KNOCK SENSOR DETECTION SYSTEM – ECU LOGIC IMPROVEMENT (PI1802)

WARRANTY INFORMATION (PI1802B):

N Code: N99 C Code: C99

Model	Claim Type	Causal P/N	Qty.	Repair Description	Labor Op Code	Op Time	Replacement P/N	Qty.
SL (16MY)	R	39107 2GCD5	0	(PI1802B) KSDS - ECU Logic Improvement	180108R0	0.3 M/H	N/A	0
JF (16MY)	R	39108 2GGC5	0	(PI1802B) KSDS - ECU Logic Improvement	180109R0	0.3 M/H	N/A	0
JFa (16MY)	R	39108 2GTK5	0	(PI1802B) KSDS - ECU Logic Improvement	180A25R0	0.3 M/H	N/A	0
UMa (16MY)	R	39100 2GGF0	0	(PI1802B) KSDS - ECU Logic Improvement	180A26R0	0.3 M/H	N/A	0

WARRANTY INFORMATION (PI1802C):

N Code: N99 C Code: C99

Model	Claim Type	Causal P/N	Qty.	Repair Description	Labor Op Code	Op Time	Replacement P/N	Qty.
QL (17MY)	R	39100 2GHS0	0	(PI1802C) KSDS - ECU Logic Improvement	180110R0	0.3 M/H	N/A	0
JF (17MY)	R	39108 2GGC5	0	(PI1802C) KSDS - ECU Logic Improvement	180109R0	0.3 M/H	N/A	0
JFa (17MY)	R	39108 2GTK5	0	(PI1802C) KSDS - ECU Logic Improvement	180A27R0	0.3 M/H	N/A	0
UMa (17MY)	R	39100 2GGF0	0	(PI1802C) KSDS - ECU Logic Improvement	180A28R0	0.3 M/H	N/A	0

*** NOTICE**

VIN inquiry data for this repair is provided for tracking purposes only. Kia retailers should reference PI1802* when accessing the WebDCS system.

PE19-004

KIA

TAB 58_ PI1802_TSB_R5

	GROUP	MODEL
KIA	**Product Improvement**	**See Model List on Page 1**
	NUMBER	DATE
	1802 (Rev 5, 12/20/2018)	**July 2018**

PRODUCT IMPROVEMENT CAMPAIGN

SUBJECT: KNOCK SENSOR DETECTION SYSTEM - ECU LOGIC IMPROVEMENT (PI1802)

★ NOTICE

This bulletin has been revised to include additional information. New/revised sections of this bulletin are indicated by a black bar in the margin area.

This bulletin provides information related to a software update to the Engine Control Unit (ECU) to install the Knock Sensor Detection System (KSDS) in order to protect the engine from excessive connecting rod bearing damage. This update is for:

Year	Model	Engine	Production Date
2014	Optima (TF)	2.4L GDI	8/29/13 – 4/25/14
2015-2018	Optima (TF/QF/JF/JFa)	2.4L & 2.0T GDI	4/16/14 – 7/11/18
2014-2018	Sportage (SL/QL)	2.4L & 2.0T GDI	9/30/13 – 4/5/18
2015-2018	Sorento (XMa/UMa)	2.4L & 2.0T GDI	1/3/14 – 3/7/18

The KSDS detects vibrations indicating the onset of excessive connecting rod bearing wear. It is designed to alert the driver at an early stage of bearing wear before the occurrence of severe engine damage, including engine failure. If vibrations caused by bearing wear start to occur, the Malfunction Indicator Lamp (MIL) will blink continuously, and the vehicle will be placed in Limp Home Mode. This will reduce further damage to the engine and ensure that the vehicle occupants are not exposed to the risk of a more severe engine failure. At that time, Diagnostic Trouble Code ("DTC") P1326, specific to the KSDS, will be recorded in the ECU. The vehicle can continue to be operated for a limited time in Limp Home Mode, but it will accelerate slowly and have a reduced maximum speed. Also, engine RPMs will be limited to approximately 1800-2000 RPM.

Please note, since Kia launched this Product Improve Campaign, Kia has become aware that the KSDS software version installed on 2014-2015MY Optima vehicles before September 7, 2018 has an error and requires the installation of a new corrected software. Kia has identified all affected 2014-2015MY Optima vehicles which require the installation of the new corrected software, and these vehicles are identified under a separate campaign number, PI1802A1, in the WEBDCS.

Kia is requesting the completion of this Product Improvement Campaign on all affected vehicles. Before conducting the procedure, verify the vehicle is included in the list of affected VINs. Also, please have your KDS connected to the internet regularly to get the latest software updates available.

File Under: <Product Improvement>

Circulate To: ☒ **General Manager** ☒ **Service Manager** ☒ **Parts Manager**
☒ **Service Advisors** ☒ **Technicians** ☒ **Body Shop Manager** ☐ **Fleet Repair**

SUBJECT: KNOCK SENSOR DETECTION SYSTEM – ECU LOGIC IMPROVEMENT (PI1802)

★ NOTICE

To assure complete customer satisfaction, always remember to refer to WebDCS Warranty Coverage (validation) Inquiry Screen (Service → Warranty Coverage → Warranty Coverage Inquiry) for a list of any additional campaigns that may need to be performed on the vehicle before returning it to the customer.

ECU Upgrade Procedure:

To correct this condition, the ECU should be reprogrammed using the KDS download, as described in this bulletin.

Upgrade Event Name
374.XMa Theta 2.4GDI Knock Sensor Detection System (KSDS) ECU Upgrade
375.TF Theta 2.0/2.4GDI Knock Sensor Detection System (KSDS) ECU Upgrade
376.SL Theta 2.0/2.4GDI Knock Sensor Detection System (KSDS) ECU Upgrade
377.QF Theta 2.0/2.4GDI Knock Sensor Detection System (KSDS) ECU Upgrade
392. UMa THETA 2.0/2.4 Knock Sensor Detection System (KSDS) ECU Upgrade (16MY)
393. JF/JFa THETA 2.0/2.4 Knock Sensor Detection System (KSDS) ECU Upgrade (16MY)
394. SL THETA 2.0/2.4 Knock Sensor Detection System (KSDS) ECU Upgrade (16MY)
398. UMA THETA 2.0/2.4 Knock Sensor Detection System(KSDS) ECU UPGRADE (17MY)
399. JF/JFA THETA 2.0/2.4 Knock Sensor Detection System(KSDS) ECU UPGRADE (17MY)
400. QL THETA 2.0/2.4 Knock Sensor Detection System(KSDS) ECU UPGRADE (17MY)
402.UMA THETA 2.0/2.4 Knock Sensor Detection System(KSDS) ECU UPGRADE (18MY)
403.JF/JFA THETA 2.0/2.4 Knock Sensor Detection System(KSDS) ECU UPGRADE (18MY)
404.QL THETA 2.0/2.4 Knock Sensor Detection System(KSDS) ECU UPGRADE (18MY)

★ NOTICE

- **A fully charged battery is necessary before ECU upgrade can take place. It is recommended that the Midtronics GR8-1299 system be used in ECU mode during charging. DO NOT connect any other battery charger to the vehicle during ECU upgrade.**
- **All ECU upgrades must be done with the ignition key in the 'ON' position.**
- **Be careful not to disconnect the VCI-II connected to the vehicle during the ECU upgrade procedure.**
- **DO NOT start the engine during ECU upgrade.**
- **DO NOT turn the ignition key 'OFF' or interrupt the power supply during ECU upgrade.**
- **When the ECU upgrade is completed, turn the ignition 'OFF' and wait 10 seconds before starting the engine.**
- **ONLY use approved ECU upgrade software designated for the correct model, year.**

⚠ CAUTION

Before attempting an ECU upgrade on any Kia model, make sure to first determine whether the particular model is equipped with an immobilizer security system. Failure to follow proper procedures may cause the PCM to become inoperative after the upgrade and any claims associated with this repair may be subject to chargeback.

★ NOTICE

For Optima models included in this TSB:
VINs that start with 5XX are designated Optima (QF/JFa) and produced in the United States.
VINs that start with KNA are designated Optima (TF/JF) are produced in South Korea.

SUBJECT: KNOCK SENSOR DETECTION SYSTEM – ECU LOGIC IMPROVEMENT (PI1802)

ROM ID INFORMATION TABLE:

Upgrade Event #374 (15 XMa), #375 (14/15 TF), #376 (14/15 SL), #377 (15 QF), #392 (16 UMa), #393 (16 JF/JFa), #394 (16 SL), #398 (17 UMa), #399 (17 JF/JFa), #400 (17 QL), #398 (17 UMa), #399 (17 JF/JFa), #400 (17 QL).

Model	ENG	IMMO	ECU P/No.	ROM ID	
				Previous	New
15MY Sor. (XMa)	2.4 (ULEV)	Yes	39113-2GBK6 39113-2GBK7 39113-2GBL6 39113-2GBL7	FFC4RH2A FFC4RHAA FFC4RHAB	FFC4RHAL
		No	39113-2GBK1 39113-2GBK2 39113-2GBL1 39113-2GBL2	FFC4MH2A FFC4MHAA FFC4MHAB	FFC4MHAL
14MY Opt. (TF)	2.4 (ULEV)	Yes	39108-2GBF0 39118-2GBF0	TEC4RH2K TEC4RH2L TEC4RH25	TEC4RH26
		No	39108-2GBE0 39118-2GBE0	TEC4MH2K TEC4MH2L TEC4MH25	TEC4MH26
	2.4 (SULEV)	Yes	39108-2GBF5	TES4RH2K TES4RH2L TES4RH25	TES4RH26
		No	39108-2GBE5	TES4MH2K TES4MH2L TES4MH25	TES4MH26
15MY Opt. (TF)	2.4 (ULEV)	Yes	39108-2GBF1	TFC4RH4K TFC4RH4L TFC4RH45	TFC4RH46
		No	39108-2GBE1 39118-2GBE1	TFC4MH4K TFC4MH4L TFC4MH45	TFC4MH46
	2.4 (SULEV)	No	39108-2GBE6	TFS4MH4K TFS4MH4L TFS4MH45	TFS4MH46
14MY Opt. (TF)	2.0T (ULEV)	Yes	39108-2GBG5 39108-2GBG6	TEC0RH2K TEC0RH2L TEC0RH25	TEC0RH26
		No	39108-2GBG0 39108-2GBG1	TEC0MH2K TEC0MH2L TEC0MH25	TEC0MH26
15MY Opt. (TF)	2.0T (ULEV)	Yes	39108-2GBG7	TFC0RH4K TFC0RH4L TFC0RH45	TFC0RH46
14MY Spo. (SL)	2.4 (ULEV)	Yes	39107-2GCD0 39107-2GCE0 39117-2GCD0 39117-2GCE0	SEC4RH2A SEC4RH2B SEC4RH2C SEC4RH2D	SEC4RH2K
		No	39107-2GCD5 39107-2GCE5 39117-2GCD5 39117-2GCE5	SEC4MH2A SEC4MH2B SEC4MH2C SEC4MH2D	SEC4MH2K

SUBJECT: KNOCK SENSOR DETECTION SYSTEM – ECU LOGIC IMPROVEMENT (PI1802)

Model	ENG	IMMO	ECU P/No.	ROM ID	
				Previous	New
14MY Spo. (SL)	2.4 (SULEV)	Yes	39107-2GCG0	SES4RH2A SES4RH2B SES4RH2C SES4RH2D	SES4RH2K
		No	39107-2GCG5	SES4MH2A SES4MH2B SES4MH2C SES4MH2D	SES4MH2K
15MY Spo. (SL)	2.4 (ULEV)	Yes	39107-2GCD1 39107-2GCD2 39107-2GCE1 39107-2GCE2 39117-2GCD1 39117-2GCE1	SFC4RH4A SFC4RH4B	SFC4RH4K
		No	39107-2GCD6 39107-2GCD7 39107-2GCE6 39107-2GCE7 39117-2GCD6 39117-2GCE6	SFC4MH4A SFC4MH4B	SFC4MH4K
	2.4 (SULEV)	Yes	39107-2GCG1 39107-2GCG2	SFS4RH4A SFS4RH4B	SFS4RH4K
		No	39107-2GCG6 39107-2GCG7	SFS4MH4A SFS4MH4B	SFS4MH4K
14MY Spo. (SL)	2.0T (ULEV)	Yes	39107-2GCC0	SEC0RH2A	SEC0RH2K
		No	39107-2GCC5	SEC0MH2A	SEC0MH2K
	2.0T (ULEV)	Yes	39107-2GCC1 39107-2GCC2	SFC0RH4A	SFC0RH4K
		No	39107-2GCC6 39107-2GCC7	SFC0MH4A	SFC0MH4K
15MY Spo. (SL)	2.0T (ULEV)	Yes	39107-2GCC3	SGC0RH4A	SGC0RH4K
		No	39107-2GCC8	SGC0MH4A	SGC0MH4K
15MY Opt. (QF)	2.4 (ULEV)	Yes	39108-2GBJ1 39108-2GBJ2 39118-2GBJ1	TFC4RH4A TFC4RH4B TFC4RH41	TFC4RH42
		No	39108-2GBH1 39108-2GBH2 39118-2GBH1	TFC4MH4A TFC4MH4B TFC4MH41	TFC4MH42
	2.4 (SULEV)	Yes	39108-2GBJ6 39108-2GBJ7	TFS4RH4A TFS4RH4B TFS4RH41	TFS4RH42
		No	39108-2GBH6 39108-2GBH7	TFS4MH4A TFS4MH4B TFS4MH41	TFS4MH42
15MY Opt. (QF)	2.0T (ULEV)	Yes	39108-2GBK7 39108-2GBK8	TFC0RH4A TFC0RH4B TFC0RH41	TFC0RH42
		No	39108-2GBK2 39108-2GBK3	TFC0MH4A TFC0MH4B TFC0MH41	TFC0MH42

SUBJECT: KNOCK SENSOR DETECTION SYSTEM – ECU LOGIC IMPROVEMENT (PI1802)

Model	ENG	IMMO	ECU P/No.	ROM ID	
				Previous	New
16MY Sor. (UMa) 2WD	2.4 (ULEV)	Yes	39100-2GGF5	2WD_UMAFNC4ER91A 2WD_UMAFNC4ER92A 2WD_UMAGNC4ERA31 2WD_UMAFNC4ERA51 2WD_UMAFNC4ERA52	2WD_UMAFNC4ERA6K
			39100-2GGF6	2WD_UMAFNC4ERA3A 2WD_UMAFNC4ERA5A 2WD_UMAFNC4ERA5B 2WD_UMAFNC4ERA5C	2WD_UMAFNC4ERA6M
			39100-2GGF6	2WD_UMAHNC4ERA6B	2WD_UMAHNC4ERA6K
		No	39100-2GGF0	2WD_UMAFNC4EM91A 2WD_UMAFNC4EM92A 2WD_UMAGNC4EMA31 2WD_UMAFNC4EMA51 2WD_UMAFNC4EMA52	2WD_UMAFNC4EMA6K
			39100-2GGF1	2WD_UMAFNC4EMA3A 2WD_UMAFNC4EMA5A 2WD_UMAFNC4EMA5B 2WD_UMAFNC4EMA5C	2WD_UMAFNC4EMA6M
			39100-2GGF1	2WD_UMAHNC4EMA6B	2WD_UMAHNC4EMA6K
16MY Sor. (UMa) 4WD	2.4 (ULEV)	Yes	39100-2GGH5	4WD_UMAFNC4ER91A 4WD_UMAFNC4ER92A 4WD_UMAGNC4ERA31 4WD_UMAFNC4ERA51 4WD_UMAFNC4ERA52	4WD_UMAFNC4ERA6O
			39100-2GGH6	4WD_UMAFNC4ERA3A 4WD_UMAFNC4ERA5A 4WD_UMAFNC4ERA5B 4WD_UMAFNC4ERA5C	4WD_UMAFNC4ERA6P
			39100-2GGH6	4WD_UMAHNC4ERA6B	4WD_UMAHNC4ERA6L
		No	39100-2GGH0	4WD_UMAFNC4EM91A 4WD_UMAFNC4EM92A 4WD_UMAGNC4EMA31 4WD_UMAFNC4EMA51 4WD_UMAFNC4EMA52	4WD_UMAFNC4EMA6O
			39100-2GGH1	4WD_UMAFNC4EMA3A 4WD_UMAFNC4EMA5A 4WD_UMAFNC4EMA5B 4WD_UMAFNC4EMA5C	4WD_UMAFNC4EMA6P
			39100-2GGH1	4WD_UMAHNC4EMA6B	4WD_UMAHNC4EMA6L
16MY Sor. (UMa) 2WD	2.0T (ULEV)	Yes	39100-2GTC6	2WD_UMAGNC0ERA3A 2WD_UMAGNC0ERA5A 2WD_UMAGNC0ERA61	2WD_UMAGNC0ERA6K
			39100-2GTC5	2WD_UMAFNC0ER92A 2WD_UMAFNC0ER921 2WD_UMAFNC0ER91A	2WD_UMAFNC0ER92K
		No	39100-2GTC1	2WD_UMAGNC0EMA3A 2WD_UMAGNC0EMA5A 2WD_UMAGNC0EMA61	2WD_UMAGNC0EMA6K
			39100-2GTC0	2WD_UMAFNC0EM92A 2WD_UMAFNC0EM921 2WD_UMAFNC0EM91A	2WD_UMAFNC0EM92K

SUBJECT: KNOCK SENSOR DETECTION SYSTEM – ECU LOGIC IMPROVEMENT (PI1802)

Model	ENG	IMMO	ECU P/No.	ROM ID	
				Previous	New
16MY Sor. (UMa) 4WD	2.0T (ULEV)	Yes	39100-2GTD6	4WD_UMAGNC0ERA3A 4WD_UMAGNC0ERA5A 4WD_UMAGNC0ERA61	4WD_UMAGNC0ERA6L
			39100-2GTD5	4WD_UMAFNC0ER92A 4WD_UMAFNC0ER921 4WD_UMAFNC0ER91A	4WD_UMAFNC0ER92L
		No	39100-2GTD1	4WD_UMAGNC0EMA3A 4WD_UMAGNC0EMA5A 4WD_UMAGNC0EMA61	4WD_UMAGNC0EMA6L
			39100-2GTD0	4WD_UMAFNC0EM92A 4WD_UMAFNC0EM921 4WD_UMAFNC0EM91A	4WD_UMAFNC0EM92A 4WD_UMAFNC0EM92L
16MY Opt. (JF/JFa)	2.4 (ULEV)	Yes	39108-2GGC5	JFAGNC4ERB0A JFAGNC4ERB0B JFAGNC4ERC0A JFAGNC4ERC3A	JFAGNC4ERC3K
			39108-2GGC5	JFAGNC4ERD11	JFAGNC4ERD1K
		No	39108-2GGC0	JFAGNC4EMB0A JFAGNC4EMB0B JFAGNC4EMC0A JFAGNC4EMC3A	JFAGNC4EMC3K
			39108-2GGC0	JFAGNC4EMD11	JFAGNC4EMD1K
	2.4 (SULEV)	Yes	39108-2GGD5	JFAGNS4ERB0A JFAGNS4ERB0B JFAGNS4ERC0A JFAGNS4ERC3A	JFAGNS4ERC3K
			39108-2GGD5	JFAGNS4ERD11	JFAGNS4ERD1K
		No	39108-2GGD0	JFAGNS4EMB0A JFAGNS4EMB0B JFAGNS4EMC0A JFAGNS4EMC3A	JFAGNS4EMC3K
			39108-2GGD0	JFAGNS4EMD11	JFAGNS4EMD1K
16MY Opt. (JFa)	2.0T (ULEV)	Yes	39108-2GTK5	JFAGNC0ERB0A JFAGNC0ERB0B JFAGNC0ERB4A	JFAGNC0ERB4K
		No	39108-2GTK0	JFAGNC0EMB0A JFAGNC0EMB0B JFAGNC0EMB4A	JFAGNC0EMB4K
16MY Spo. (SL)	2.4 (ULEV)	Yes	39107-2GCD3 39107-2GCE3 39117-2GCD3 39117-2GCE3	SGC4RH4A SGC4RH4B	SGC4RH4K
		No	39107-2GCD8 39107-2GCE8 39117-2GCD8 39117-2GCE8	SGC4MH4A SGC4MH4B	SGC4MH4K
	2.4 (SULEV)	Yes	39107-2GCG3	SGS4RH4A SGS4RH4B	SGS4RH4K
		No	39107-2GCG8	SGS4MH4A SGS4MH4B	SGS4MH4K

SUBJECT: KNOCK SENSOR DETECTION SYSTEM – ECU LOGIC IMPROVEMENT (PI1802)

Model	ENG	IMMO	ECU P/No.	ROM ID	
				Previous	New
17MY Sor. (UMa) 2WD	2.4 (ULEV)	Yes	39100-2GGF7	UMAHNC4ERA5A UMAHNC4ERA5B UMAHNC4ERA6A UMAHNC4ERA6B	UMAHNC4ERA6K
		No	39100-2GGF2	UMAHNC4EMA5A UMAHNC4EMA5B UMAHNC4EMA6A UMAHNC4EMA6B	UMAHNC4EMA6K
17MY Sor. (UMa) 4WD	2.4 (ULEV)	Yes	39100-2GGH7	UMAHNC4ERA5A UMAHNC4ERA5B UMAHNC4ERA6A UMAHNC4ERA6B	UMAHNC4ERA6L
		No	39100-2GGH2	UMAHNC4EMA5A UMAHNC4EMA5B UMAHNC4EMA6A UMAHNC4EMA6B	UMAHNC4EMA6L
17MY Sor. (UMa) 2WD	2.0T (ULEV)	Yes	39100-2GTC7	UMAHNC0ERA5A UMAHNC0ERA6A UMAHNC0ERA6B	UMAHNC0ERA6K
		No	39100-2GTC2	UMAHNC0EMA5A UMAHNC0EMA6A UMAHNC0EMA6B	UMAHNC0EMA6K
17MY Sor. (UMa) 4WD	2.0T (ULEV)	Yes	39100-2GTD7	UMAHNC0ERA5A UMAHNC0ERA6A UMAHNC0ERA6B	UMAHNC0ERA6L
		No	39100-2GTD2	UMAHNC0EMA5A UMAHNC0EMA6A UMAHNC0EMA6B	UMAHNC0EMA6L
17MY Opt. (JF/JFa)	2.4 (ULEV)	Yes	39108-2GGC6	JFAHNC4ERC3A JFAHNC4ERC3B	JFAHNC4ERC31
			39108-2GGC8	JFAHNC4ERD1A	JFAHNC4ERD11
		No	39108-2GGC1	JFAHNC4EMC3A JFAHNC4EMC3B	JFAHNC4EMC31
			39108-2GGC3	JFAHNC4EMD1A	JFAHNC4EMD11
			39108-2GGL1	JFAHNC4EMC3K JFAHNC4EMC3L	JFAHNC4EMC35
			39108-2GGL2	JFAHNC4EMD1K	JFAHNC4EMD15
	2.4 (SULEV)	Yes	39108-2GGD6	JFAHNS4ERC3A JFAHNS4ERC3B	JFAHNS4ERC31
			39108-2GGD8	JFAHNS4ERD1A	JFAHNS4ERD11
		No	39108-2GGD1	JFAHNS4EMC3A JFAHNS4EMC3B	JFAHNS4EMC31
			39108-2GGD3	JFAHNS4EMD1A	JFAHNS4EMD11
			39108-2GGM1	JFAHNS4EMC3K JFAHNS4EMC3L	JFAHNS4EMC35
			39108-2GGM2	JFAHNS4EMD1K	JFAHNS4EMD15

SUBJECT: KNOCK SENSOR DETECTION SYSTEM – ECU LOGIC IMPROVEMENT (PI1802)

Model	ENG	IMMO	ECU P/No.	ROM ID	
				Previous	New
17MY Opt. (JFa)	2.0T (ULEV)	Yes	39108-2GTK6	JFAHNC0ERC3A JFAHNC0ERC3B	JFAHNC0ERC3K
		No	39108-2GTK1	JFAHNC0EMC3A JFAHNC0EMC3B	JFAHNC0EMC3K
17MY Spo. (QL) 2WD	2.4 (ULEV)	Yes	39100-2GHR5	QLDHNC4ERB2A QLDHNC4ERB4A QLDHNC4ERB4B QLDGNC4ERB2A	QLDHNC4ERB41
		No	39100-2GHS0	QLDHNC4EMB2A QLDHNC4EMB4A QLDHNC4EMB4B QLDGNC4EMB2A	QLDHNC4EMB41
	2.4 (SULEV)	Yes	39100-2GHT5	QLDHNS4ERB2A QLDHNS4ERB4A QLDHNS4ERB4B QLDGNS4ERB2A	QLDHNS4ERB41
		No	39100-2GHV0	QLDHNS4EMB2A QLDHNS4EMB4A QLDHNS4EMB4B QLDGNS4EMB2A	QLDHNS4EMB41
17MY Spo. (QL) 4WD	2.4 (ULEV)	Yes	39100-2GHS5	QLDHNC4ERB2K QLDHNC4ERB4K QLDHNC4ERB4L QLDGNC4ERB2K	QLDHNC4ERB45
		No	39100-2GHT0	QLDHNC4EMB2K QLDHNC4EMB4K QLDHNC4EMB4L QLDGNC4EMB2K	QLDHNC4EMB45
	2.4 (SULEV)	Yes	39100-2GHV5	QLDHNS4ERB2K QLDHNS4ERB4K QLDHNS4ERB4L QLDGNS4ERB2K	QLDHNS4ERB45
		No	39100-2GHW0	QLDHNS4EMB2K QLDHNS4EMB4K QLDHNS4EMB4L QLDGNS4EMB2K	QLDHNS4EMB45
17MY Spo. (QL) 2WD	2.0T (ULEV)	Yes	39100-2GHJ0	QLDGNC0ERB2A QLDHNC0ERB4A QLDHNC0ERB4B QLDHNC0ERB4C	QLDHNC0ERB41
		No	39100-2GHJ5	QLDGNC0EMB2A QLDHNC0EMB4A QLDHNC0EMB4B QLDHNC0EMB4C	QLDHNC0EMB41
17MY Spo. (QL) 4WD	2.0T (ULEV)	Yes	39100-2GHK0	QLDGNC0ERB2K QLDHNC0ERB4K QLDHNC0ERB4L QLDHNC0ERB4M	QLDHNC0ERB45
		No	39100-2GHK5	QLDGNC0EMB2K QLDHNC0EMB4K QLDHNC0EMB4L QLDHNC0EMB4M	QLDHNC0EMB45

SUBJECT: KNOCK SENSOR DETECTION SYSTEM – ECU LOGIC IMPROVEMENT (PI1802)

Model	ENG	IMMO	ECU P/No.	ROM ID	
				Previous	New
18MY Sor. (UMa) 2WD	2.4 (ULEV)	Yes	39100-2GGF8	UMAINC4ERA6A UMAINC4ERA7A UMAINC4ERA7B UMAINC4ERD5A UMAINC4ERD5B	UMAINC4ERD5K
		No	39100-2GGF3	UMAINC4EMA6A UMAINC4EMA7A UMAINC4EMA7B UMAINC4EMD5A UMAINC4EMD5B	UMAINC4EMD5K
18MY Sor. (UMa) 4WD	2.4 (ULEV)	Yes	39100-2GGH8	UMAINC4ERA6A UMAINC4ERA7A UMAINC4ERA7B UMAINC4ERD5A UMAINC4ERD5B	UMAINC4ERD5L
		No	39100-2GGH3	UMAINC4EMA6A UMAINC4EMA7A UMAINC4EMA7B UMAINC4EMD5A UMAINC4EMD5B	UMAINC4EMD5L
18MY Sor. (UMa) 2WD	2.0T (ULEV)	Yes	39100-2GTC8	UMAINC0ERA6A UMAINC0ERA7A UMAINC0ERA7B UMAINC0ERA7C	UMAINC0ERA8K
		No	39100-2GTC3	UMAINC0EMA6A UMAINC0EMA7A UMAINC0EMA7B UMAINC0EMA7C	UMAINC0EMA8K
18MY Sor. (UMa) 4WD	2.0T (ULEV)	Yes	39100-2GTD8	UMAINC0ERA6A UMAINC0ERA7A UMAINC0ERA7B UMAINC0ERA7C	UMAINC0ERA8L
		No	39100-2GTD3	UMAINC0EMA6A UMAINC0EMA7A UMAINC0EMA7B UMAINC0EMA7C	UMAINC0EMA8L
18MY Opt. (JF/JFa)	2.4 (ULEV)	Yes	39108-2GGC7	JFAINC4ERDAA JFAINC4ERDAB JFAINC4ERD5A JFAINC4ERD5B	JFAINC4ERD5K
		No	39108-2GGC2	JFAINC4EMDAA JFAINC4EMDAB JFAINC4EMD5A JFAINC4EMD5B	JFAINC4EMD5K
	2.4 (SULEV)	Yes	39108-2GGD7	JFAINS4ERDAA JFAINS4ERDAB JFAINS4ERD5A JFAINS4ERD5B	JFAINS4ERD5K
		No	39108-2GTK7	JFAINC0ERCAA JFAINC0ERCAB JFAINC0ERCAC	JFAINC0ERCAK

SUBJECT: KNOCK SENSOR DETECTION SYSTEM – ECU LOGIC IMPROVEMENT (PI1802)

Model	ENG	IMMO	ECU P/No.	ROM ID	
				Previous	New
18MY Opt. (JFa)	2.0T (ULEV)	Yes	39108-2GTK7	JFAINC0ERCAA JFAINC0ERCAB JFAINC0ERCAC	JFAINC0ERCAK
		No	39108-2GTK2	JFAINC0EMCAA JFAINC0EMCAB JFAINC0EMCAC	JFAINC0EMCAK
18MY Spo. (QL) 2WD	2.4 (ULEV)	Yes	39100-2GHR6	QLDINC4ERC3A QLDINC4ERCAA QLDINC4ERCAB QLDINC4ERD5A	QLDINC4ERD51
		No	39100-2GHS1	QLDINC4EMC3A QLDINC4EMCAA QLDINC4EMCAB QLDINC4EMD5A	QLDINC4EMD51
	2.4 (SULEV)	Yes	39100-2GHT6	QLDINS4ERC3A QLDINS4ERCAA QLDINS4ERCAB QLDINS4ERD5A	QLDINS4ERD51
		No	39100-2GHV1	QLDINS4EMC3A QLDINS4EMCAA QLDINS4EMCAB QLDINS4EMD5A	QLDINS4EMD51
18MY Spo. (QL) 4WD	2.4 (ULEV)	Yes	39100-2GHS6	QLDINC4ERC3K QLDINC4ERCAK QLDINC4ERCAM QLDINC4ERD5K	QLDINC4ERD55
		No	39100-2GHT1	QLDINC4EMC3K QLDINC4EMCAK QLDINC4EMCAM QLDINC4EMD5K	QLDINC4EMD55
	2.4 (SULEV)	Yes	39100-2GHV6	QLDINS4ERC3K QLDINS4ERCAK QLDINS4ERCAM QLDINS4ERD5K	QLDINS4ERD55
		No	39100-2GHW1	QLDINS4EMC3K QLDINS4EMCAK QLDINS4EMCAM QLDINS4EMD5K	QLDINS4EMD55
18MY Spo. (QL) 2WD	2.0T (ULEV)	Yes	39100-2GHJ1	QLDINC0ERB4A QLDINC0ERB5A QLDINC0ERB5B QLDINC0ERD5A	QLDINC0ERD51
		No	39100-2GHJ6	QLDINC0EMB4A QLDINC0EMB5A QLDINC0EMB5B QLDINC0EMD5A	QLDINC0EMD51
18MY Spo. (QL) 4WD	2.0T (ULEV)	Yes	39100-2GHK1	QLDINC0ERB4K QLDINC0ERB5K QLDINC0ERB5M QLDINC0ERD5K	QLDINC0ERD55
		No	39100-2GHK6	QLDINC0EMB4K QLDINC0EMB5K QLDINC0EMB5M QLDINC0EMD5K	QLDINC0EMD55

To verify the vehicle is affected, be sure to check the Calibration Identification of the vehicle's ECM ROM ID and reference the Information Table as necessary.

SUBJECT: KNOCK SENSOR DETECTION SYSTEM – ECU LOGIC IMPROVEMENT (PI1802)

★ NOTICE

Prior to performing the ECU upgrade, be sure to check that the KDS is fully charged.

1. Connect the VCI-II to the OBD-II connector, located under the driver's side of the instrument panel.



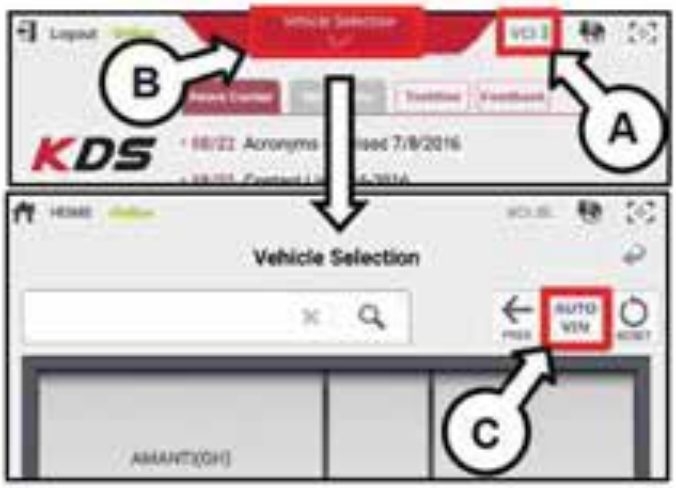
★ NOTICE

The ECU upgrade function on KDS operates wirelessly. It is not necessary to perform the upgrade via USB cable.

2. With the ignition ON, turn ON the KDS tablet. Select **KDS** from the home screen.



3. Confirm communication with VCI (A) and then configure the vehicle (B) using the **AUTO VIN** (C) feature.



4. Select **ECU Upgrade**.



5. The KDS will check the server for recently uploaded Events and then automatically download the applicable **Upgrade Event**, listed on page 3.

★ NOTICE

The vehicle must be identified in Vehicle Selection to download an Event for that vehicle.



KDS screenshot shown above is for demonstration purposes only. Events shown in screenshot are not applicable to this bulletin.

6. Select **Auto Mode**.

★ NOTICE

Do NOT attempt to perform a Manual Mode upgrade UNLESS Auto Mode fails. Always follow the instructions given on the KDS in either Auto or Manual mode.



7. Select the **ENGINE** system under the System selection menu.

   Touch **ID Check** (D) and confirm that the latest update is available.

   Select the applicable **Upgrade Event** and select **Upgrade** to continue.

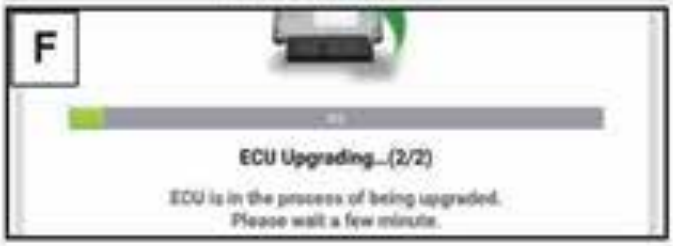


8. The ECU upgrade will begin and the progress of the upgrade will appear on the bar graph. Upgrade part (1/2) (E) will download the upgrade event to the VCI-II. Upgrade part (2/2) (F) will upgrade the ECU.

★ NOTICE

Do not touch the system buttons (like 'Back', 'Home', 'etc.') while performing ECU Upgrade.





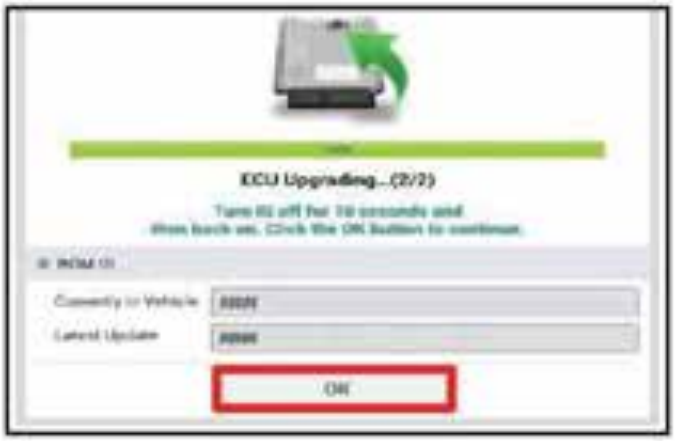
9. If a "Communication Fail" screen appears, verify that the VCI-II and KDS are communicating properly. Touch **OK** and restart the procedure from step 4.



★ NOTICE

If an error notice continues to appear or if the upgrade cannot be performed, DO NOT disconnect the KDS/VCI-II. Contact GIT America Help Desk at (888) 542-4371 or Techline.

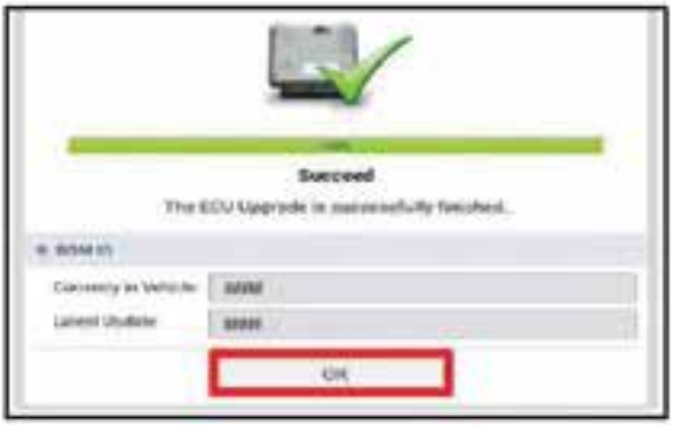
10. When instructed on the KDS, turn the ignition **OFF** for ten (10) seconds then back on. Touch **OK** to continue.



★ NOTICE

If applicable and instructed on the KDS, leave the ignition ON for five (5) seconds to perform ETC Adaptive Learning.

11. Once the upgrade is complete, touch **OK** to finalize the procedure.



12. When prompted, select **YES** to check for Diagnostic Trouble Codes (DTC) and erase any DTCs stored such as EPS, ESC, and TPMS that may have been set during the upgrade.



13. Start the engine to confirm proper operation of the vehicle.

SUBJECT: KNOCK SENSOR DETECTION SYSTEM – ECU LOGIC IMPROVEMENT (PI1802)

Manual Upgrade Procedure:

★ NOTICE

The manual upgrade should ONLY be performed if the automatic upgrade fails.

If the automatic upgrade fails, turn the ignition OFF for about 10 seconds then place it back in the ON position to reset the control unit BEFORE performing manual upgrade.

See table below for Manual Mode passwords.

Manual Mode ECU Upgrade Passwords (14-15MY)

Model	Menu	Password
XMa 2.4	XMA 2.4GDI -IMMO : 39113-2GBK1/K2/L1/L2	1322
	XMA 2.4GDI +IMMO/SMK : 39113-2GBK8/K7/L6/L7	1327
TF 2.0T	TF F/L 2.0 TGDI 14MY(ULEV) -IMMO : 39108-2GBG0/G1	8201
	TF F/L 2.0 TGDI 14MY(ULEV) +IMMO/SMK : 39108-2GBG5/G6	8256
	TF F/L 2.0 TGDI 15MY(ULEV) +IMMO/SMK : 39108-2GBG7	0827
TF 2.4	TF F/L 2.4 GDI 14MY(ULEV) -IMMO : 39108/18-2GBE0	1820
	TF F/L 2.4 GDI 14MY(ULEV) +IMMO/SMK : 39108/18-2GBF0	1821
	TF F/L 2.4 GDI 14MY(SULEV) -IMMO : 39108-2GBE5	0828
	TF F/L 2.4 GDI 14MY(SULEV) +IMMO/SMK : 39108-2GBF5	0829
	TF F/L 2.4 GDI 15MY(ULEV) -IMMO : 39108/18-2GBE1	1822
	TF F/L 2.4 GDI 15MY(ULEV) +IMMO/SMK : 39108-2GBF1	0821
	TF F/L 2.4 GDI 15MY(SULEV) -IMMO : 39108-2GBE6	0826
SL 2.0T	SL 2.0 TGDI 14MY(ULEV) -IMMO : 39107-2GCC5	0725
	SL 2.0 TGDI 14MY(ULEV) +IMMO/SMK : 39107-2GCC0	0720
	SL 2.0 TGDI 15MY(ULEV) -IMMO : 39107-2GCC6/C7	7267
	SL 2.0 TGDI 15MY(ULEV) +IMMO/SMK : 39107-2GCC1/C2	7212
	SL 2.0T-GDI -IMMO 6AT 15MY (ULEV) : 39107-2GCC8	0729
	SL 2.0T-GDI +IMMO/SMK 6AT 15MY (ULEV) : 39107-2GCC3	0724
SL 2.4	SL 2.4 GDI 14MY(ULEV) -IMMO : 39107/17-2GCD5/E5	7255
	SL 2.4 GDI 14MY(ULEV) +IMMO/SMK : 39107/17-2GCD0/E0	7200
	SL 2.4 GDI 14MY(SULEV) -IMMO : 39107-2GCG5	0726
	SL 2.4 GDI 14MY(SULEV) +IMMO/SMK : 39107-2GCG0	0721
	SL 2.4 GDI 15MY(ULEV) -IMMO : 39107-2GCD6/D7/E6/E7, 39117-2GCD6/E6	7266
	SL 2.4 GDI 15MY(ULEV) +IMMO/SMK : 39107-2GCD1/D2/E1/E2, 39117-2GCD1/E1	7211
	SL 2.4 GDI 15MY(SULEV) -IMMO : 39107-2GCG6/G7	7268
	SL 2.4 GDI 15MY(SULEV) +IMMO/SMK : 39107-2GCG1/G2	7213
QF 2.0T	QF 2.0 TGDI 15MY(ULEV) -IMMO : 39108-2GBK2/K3	0823
	QF 2.0 TGDI 15MY(ULEV) +IMMO/SMK : 39108-2GBK7/K8	0828
QF 2.4	QF 2.4 GDI 15MY(ULEV) -IMMO : 39108-2GBH1/H2, 39118-2GBH1	1821
	QF 2.4 GDI 15MY(ULEV) +IMMO/SMK : 39108-2GBJ1/J2, 39118-2GBJ1	1822
	QF 2.4 GDI 15MY(SULEV) -IMMO : 39108-2GBH6/H7	0827
	QF 2.4 GDI 15MY(SULEV) +IMMO/SMK : 39108-2GBJ6/J7	0829

SUBJECT: KNOCK SENSOR DETECTION SYSTEM – ECU LOGIC IMPROVEMENT (PI1802)

Manual Mode ECU Upgrade Passwords (16MY)

Model	Menu	Password
UMa 2.4	UMA 2.4GDI -IMMO 6AT 15~16MY(2WD/ULEV) : 39100-2GGF0 [2WD_UMAFNC4EM91A/92A/A31/A51/A52]	0020
	UMA 2.4GDI +IMMO/SMK 6AT 15~16MY(2WD/ULEV) : 39100-2GGF5 [2WD_UMAFNC4ER91A/92A/A31/A51/A52]	0025
	UMA 2.4GDI -IMMO 6AT 15~16MY(4WD/ULEV) : 39100-2GGH0 [4WD_UMAFNC4EM91A/92A/A31/A51/A52]	0021
	UMA 2.4GDI +IMMO/SMK 6AT 15~16MY(4WD/ULEV) : 39100-2GGH5 [4WD_UMAFNC4ER91A/92A/A31/A51/A52]	0026
	UMA 2.4GDI -IMMO 6AT 15~16MY(2WD/ULEV) : 39100-2GGF1 [2WD_UMAFNC4EMA3A/5A/5B/5C]	0022
	UMA 2.4GDI +IMMO/SMK 6AT 15~16MY(2WD/ULEV) : 39100-2GGF6 [2WD_UMAFNC4ERA3A/5A/5B/5C]	0027
	UMA 2.4GDI -IMMO 6AT 15~16MY(4WD/ULEV) : 39100-2GGH1 [4WD_UMAFNC4EMA3A/5A/5B/5C]	0023
	UMA 2.4GDI +IMMO/SMK 6AT 15~16MY(4WD/ULEV) : 39100-2GGH6 [4WD_UMAFNC4ERA3A/5A/5B/5C]	0028
	UMA 2.4 GDI 6AT -IMMO 15~16MY (2WD/ULEV) : 39100-2GGF1 [2WD_UMAHNC4EMA6B]	3981
	UMA 2.4 GDI 6AT +IMMO/SMK 15~16MY (2WD/ULEV) : 39100-2GGF6 [2WD_UMAHNC4ERA6B]	3982
	UMA 2.4 GDI 6AT -IMMO 15~16MY (4WD/ULEV) : 39100-2GGH1 [4WD_UMAHNC4EMA6B]	3983
	UMA 2.4 GDI 6AT +IMMO/SMK 15~16MY (4WD/ULEV) : 39100-2GGH6 [4WD_UMAHNC4ERA6B]	3984
UMa 2.0T	UMA 2.0T-GDI -IMMO 6AT 15MY(2WD/ULEV) : 39100-2GTC0 [2WD_UMAFNC0EM92A/1,91A]	2020
	UMA 2.0T-GDI +IMMO/SMK 6AT 15MY(2WD/ULEV) : 39100-2GTC5 [2WD_UMAFNC0ER92A/1,91A]	2025
	UMA 2.0T-GDI -IMMO 6AT 15MY(4WD/ULEV) : 39100-2GTD0 [4WD_UMAFNC0EM92A/1,91A]	2021
	UMA 2.0T-GDI +IMMO/SMK 6AT 15MY(4WD/ULEV) : 39100-2GTD5 [4WD_UMAFNC0ER92A/1,91A]	2026
	UMA 2.0T-GDI -IMMO 6AT 16MY(2WD/ULEV) : 39100-2GTC1 [2WD_UMAGNC0EMA3A/5A/61]	2022
	UMA 2.0T-GDI +IMMO/SMK 6AT 16MY(2WD/ULEV) : 39100-2GTC6 [2WD_UMAGNC0ERA3A/5A/61]	2027
	UMA 2.0T-GDI -IMMO 6AT 16MY(4WD/ULEV) : 39100-2GTD1 [4WD_UMAGNC0EMA3A/5A/61]	2023
	UMA 2.0T-GDI +IMMO/SMK 6AT 16MY(4WD/ULEV) : 39100-2GTD6 [4WD_UMAGNC0ERA3A/5A/61]	2028
JF/JFa 2.4	JF/JFA 2.4GDI -IMMO 6AT 16MY (ULEV) : 39108-2GGC0 [JFAGNC4EMB0A/B0B/C0A/C3A]	0820
	JF/JFA 2.4GDI +IMMO/SMK 6AT 16MY (ULEV) : 39108-2GGC5 [JFAGNC4ERB0A/B0B/C0A/C3A]	0825
	JF/JFA 2.4GDI -IMMO 6AT 16MY (SULEV) : 39108-2GGD0 [JFAGNS4EMB0A/B0B/C0A/C3A]	0821
	JF/JFA 2.4GDI +IMMO/SMK 6AT 16MY (SULEV) : 39108-2GGD5 [JFAGNS4ERB0A/B0B/C0A/C3A]	0826
	JF/JFA 2.4GDI -IMMO 6AT 16MY (ULEV) : 39108-2GGC0 [JFAGNC4EMD11]	0822
	JF/JFA 2.4GDI +IMMO/SMK 6AT 16MY (ULEV) : 39108-2GGC5 [JFAGNC4ERD11]	0827
	JF/JFA 2.4GDI -IMMO 6AT 16MY (SULEV) : 39108-2GGD0 [JFAGNS4EMD11]	0823
	JF/JFA 2.4GDI +IMMO/SMK 6AT 16MY (SULEV) : 39108-2GGD5 [JFAGNS4ERD11]	0828
JFa 2.0T	JFA 2.0T-GDI -IMMO 6AT 16MY (ULEV) : 39108-2GTK0	0824
	JFA 2.0T-GDI +IMMO/SMK 6AT 16MY (ULEV) : 39108-2GTK5	0829
SL 2.4	SL 2.4GDI -IMMO 6AT/MT 16MY (ULEV) : 39107/17-2GCD8/E8	1728
	SL 2.4GDI +IMMO/SMK 6AT/MT 16MY (ULEV) : 39107/17-2GCD3/E3	1723
	SL 2.4GDI -IMMO 6AT 16MY (SULEV) : 39107-2GCG8	0728
	SL 2.4GDI +IMMO/SMK 6AT 16MY (SULEV) : 39107-2GCG3	0723

SUBJECT: KNOCK SENSOR DETECTION SYSTEM – ECU LOGIC IMPROVEMENT (PI1802)

Manual Mode ECU Upgrade Passwords (17MY)

Model	Menu	Password
UMa 2.4	UMA 2.4 GDI 6AT -IMMO 17MY (2WD/ULEV) : 39100-2GGF2 [2WD_UMAHNC4EMA5A/A5B/A6A/A6B]	0022
	UMA 2.4 GDI 6AT +IMMO/SMK 17MY (2WD/ULEV) : 39100-2GGF7 [2WD_UMAHNC4ERA5A/A5B/A6A/A6B]	0027
	UMA 2.4 GDI 6AT -IMMO 17MY (4WD/ULEV) : 39100-2GGH2 [4WD_UMAHNC4EMA5A/A5B/A6A/A6B]	0023
	UMA 2.4 GDI 6AT +IMMO/SMK 17MY (4WD/ULEV) : 39100-2GGH7 [4WD_UMAHNC4ERA5A/A5B/A6A/A6B]	0028
UMa 2.0T	UMA 2.0T-GDI 6AT -IMMO 17MY (2WD/ULEV) : 39100-2GTC2 [2WD_UMAHNC0EMA5A/A6A/A6B]	0024
	UMA 2.0T-GDI 6AT +IMMO/SMK 17MY (2WD/ULEV) : 39100-2GTC7 [2WD_UMAHNC0ERA5A/A6A/A6B]	0029
	UMA 2.0T-GDI 6AT -IMMO 17MY (4WD/ULEV) : 39100-2GTD2 [4WD_UMAHNC0EMA5A/A6A/A6B]	0025
	UMA 2.0T-GDI 6AT +IMMO/SMK 17MY (4WD/ULEV) : 39100-2GTD7 [4WD_UMAHNC0ERA5A/A6A/A6B]	0030
JF/JFa 2.4	JF/JFA 2.4 GDI 6AT -IMMO 17MY (ULEV) : 39108-2GGC1	0821
	JF/JFA 2.4 GDI 6AT +IMMO/SMK 17MY (ULEV) : 39108-2GGC6	0826
	JF/JFA 2.4 GDI 6AT -IMMO 17MY (ULEV) : 39108-2GGC3	0823
	JF/JFA 2.4 GDI 6AT +IMMO/SMK 17MY (ULEV) : 39108-2GGC8	0828
	JF/JFA 2.4 GDI 6AT -IMMO 17MY (ULEV) : 39108-2GGL1	0824
	JF/JFA 2.4 GDI 6AT +IMMO/SMK 17MY (SULEV) : 39108-2GGD6	0825
	JF/JFA 2.4 GDI 6AT -IMMO 17MY (ULEV) : 39108-2GGL2	0822
	JF/JFA 2.4 GDI 6AT +IMMO/SMK 17MY (SULEV) : 39108-2GGD8	0827
	JF/JFA 2.4 GDI 6AT -IMMO 17MY (SULEV) : 39108-2GGD1	0829
	JF/JFA 2.4 GDI 6AT -IMMO 17MY (SULEV) : 39108-2GGD3	0830
	JF/JFA 2.4 GDI 6AT -IMMO 17MY (SULEV) : 39108-2GGM1	0831
	JF/JFA 2.4 GDI 6AT -IMMO 17MY (SULEV) : 39108-2GGM2	0832
JFa 2.0T	JFA 2.0T-GDI 6AT -IMMO 17MY (ULEV) : 39108-2GTK1	0833
	JFA 2.0T-GDI 6AT +IMMO/SMK 17MY (ULEV) : 39108-2GTK6	0834
QL 2.4	QL 2.4 GDI 6AT -IMMO 17MY (2WD/ULEV) : 39100-2GHS0	0020
	QL 2.4 GDI 6AT +IMMO/SMK 17MY (2WD/ULEV) : 39100-2GHR5	0025
	QL 2.4 GDI 6AT -IMMO 17MY (4WD/ULEV) : 39100-2GHT0	0021
	QL 2.4 GDI 6AT +IMMO/SMK 17MY (4WD/ULEV) : 39100-2GHS5	0026
	QL 2.4 GDI 6AT -IMMO 17MY (2WD/SULEV) : 39100-2GHV0	0022
	QL 2.4 GDI 6AT +IMMO/SMK 17MY (2WD/SULEV) : 39100-2GHT5	0027
	QL 2.4 GDI 6AT -IMMO 17MY (4WD/SULEV) : 39100-2GHW0	0023
	QL 2.4 GDI 6AT +IMMO/SMK 17MY (4WD/SULEV) : 39100-2GHV5	0028
QL 2.0T	QL 2.0T-GDI 6AT -IMMO 17MY (2WD/ULEV) : 39100-2GHJ5	0024
	QL 2.0T-GDI 6AT +IMMO/SMK 17MY (2WD/ULEV) : 39100-2GHJ0	0029
	QL 2.0T-GDI 6AT -IMMO 17MY (4WD/ULEV) : 39100-2GHK5	0030
	QL 2.0T-GDI 6AT +IMMO/SMK 17MY (4WD/ULEV) : 39100-2GHK0	0031

SUBJECT: KNOCK SENSOR DETECTION SYSTEM – ECU LOGIC IMPROVEMENT (PI1802)

Manual Mode ECU Upgrade Passwords (18MY)

Model	Menu	Password
UMa 2.4	UMA 2.4 GDI 6AT -IMMO 18MY (2WD/ULEV) : 39100-2GGF3 [2WD_UMAINC4EMA6A/A7A/A7B/D5A/D5B]	0023
	UMA 2.4 GDI 6AT +IMMO/SMK 18MY (2WD/ULEV) : 39100-2GGF8 [2WD_UMAINC4ERA6A/A7A/A7B/D5A/D5B]	0028
	UMA 2.4 GDI 6AT -IMMO 18MY (4WD/ULEV) : 39100-2GGH3 [4WD_UMAINC4EMA6A/A7A/A7B/D5A/D5B]	0024
	UMA 2.4 GDI 6AT +IMMO/SMK 18MY (4WD/ULEV) : 39100-2GGH8 [4WD_UMAINC4ERA6A/A7A/A7B/D5A/D5B]	0029
UMa 2.0T	UMA 2.0 T-GDI 6AT -IMMO 18MY (2WD/ULEV) : 39100-2GTC3 [2WD_UMAINC0EMA6A/A7A/A7B/A7C]	0025
	UMA 2.0 T-GDI 6AT +IMMO/SMK 18MY (2WD/ULEV) : 39100-2GTC8 [2WD_UMAINC0ERA6A/A7A/A7B/A7C]	0030
	UMA 2.0 T-GDI 6AT -IMMO 18MY (4WD/ULEV) : 39100-2GTD3 [4WD_UMAINC0EMA6A/A7A/A7B/A7C]	0031
	UMA 2.0 T-GDI 6AT +IMMO/SMK 18MY (4WD/ULEV) : 39100-2GTD8 [4WD_UMAINC0ERA6A/A7A/A7B/A7C]	0032
JF/JFa 2.4	JF/JFA 2.4 GDI 6AT -IMMO 18MY (ULEV) : 39108-2GGC2	0822
	JF/JFA 2.4 GDI 6AT +IMMO/SMK 18MY (ULEV) : 39108-2GGC7	0827
	JF/JFA 2.4 GDI 6AT -IMMO 18MY (SULEV) : 39108-2GGD2	0823
	JF/JFA 2.4 GDI 6AT +IMMO/SMK 18MY (SULEV) : 39108-2GGD7	0828
JFa 2.0T	JFA 2.0 T-GDI 6AT -IMMO 18MY (ULEV) : 39108-2GTK2	0824
	JFA 2.0 T-GDI 6AT +IMMO/SMK 18MY (ULEV) : 39108-2GTK7	0829
QL 2.4	QL 2.4 GDI 6AT -IMMO 18MY (2WD/ULEV) : 39100-2GHS1	0021
	QL 2.4 GDI 6AT +IMMO/SMK 18MY (2WD/ULEV) : 39100-2GHR6	0026
	QL 2.4 GDI 6AT -IMMO 18MY (4WD/ULEV) : 39100-2GHT1	0022
	QL 2.4 GDI 6AT +IMMO/SMK 18MY (4WD/ULEV) : 39100-2GHS6	0027
	QL 2.4 GDI 6AT -IMMO 18MY (2WD/SULEV) : 39100-2GHV1	0023
	QL 2.4 GDI 6AT +IMMO/SMK 18MY (2WD/SULEV) : 39100-2GHT6	0028
	QL 2.4 GDI 6AT -IMMO 18MY (4WD/SULEV) : 39100-2GHW1	0024
	QL 2.4 GDI 6AT +IMMO/SMK 18MY (4WD/SULEV) : 39100-2GHV6	0029
QL 2.0T	QL 2.0 T-GDI 6AT -IMMO 18MY (2WD/ULEV) : 39100-2GHJ6	0025
	QL 2.0 T-GDI 6AT +IMMO/SMK 18MY (2WD/ULEV) : 39100-2GHJ1	0030
	QL 2.0 T-GDI 6AT -IMMO 18MY (4WD/ULEV) : 39100-2GHK6	0031
	QL 2.0 T-GDI 6AT +IMMO/SMK 18MY (4WD/ULEV) : 39100-2GHK1	0032

1. Within the ECU Upgrade screen displayed, select **Manual Mode**.
2. Select the **ENGINE** system under the System selection menu. Select the applicable **Upgrade Event** listed on page 3 and select **Upgrade** to continue.
3. Select the appropriate control unit part number with reference to the ROM ID Information Table on page 3-6, and select **OK**.
4. Enter the appropriate password from the Manual Mode password table above and select **OK**.
5. The upgrade will begin and the progress of the upgrade will appear on the bar graph.
6. When instructed on the KDS, turn the ignition **OFF** for ten (10) seconds then back on. Touch **OK** to continue.
7. Once the upgrade is complete, touch **OK** to finalize the procedure.
8. When prompted, select **YES** to check for Diagnostic Trouble Codes (DTC) and erase any DTCs stored such as EPS, ESC, and TPMS that may have been set during the upgrade.
9. Start the engine to confirm proper operation of the vehicle.

SUBJECT: KNOCK SENSOR DETECTION SYSTEM – ECU LOGIC IMPROVEMENT (PI1802)

AFFECTED VEHICLE RANGE:

Model	Production Date Range
14MY Optima (TF)	August 29, 2013 through April 25, 2014
15-18MY Optima (TF/QF/JF/JFa)	April 16, 2014 through July 11, 2018
14-18MY Sportage (SL/QL)	September 30, 2013 through April 5, 2018
15-18MY Sorento (XMa/UMa)	January 3, 2014 through March 7, 2018

WARRANTY INFORMATION (PI1802A):

N Code: N99 C Code: C99

Model	Claim Type	Causal P/N	Qty.	Repair Description	Labor Op Code	Op Time	Replacement P/N	Qty.
XMa (15MY)	R	39113 2GBK1	0	(PI1802A) KSDS - ECU Logic Improvement	180A10R0	0.3 M/H	N/A	0
TF (14-15MY)	R	39108 2GBE0	0	(PI1802A) KSDS - ECU Logic Improvement	180107R0	0.3 M/H	N/A	0
QF (15MY)	R	39108 2GBH1	0	(PI1802A) KSDS - ECU Logic Improvement	180A15R0	0.3 M/H	N/A	0
SL (14-15MY)	R	39107 2GCD5	0	(PI1802A) KSDS - ECU Logic Improvement	180108R0	0.3 M/H	N/A	0

WARRANTY INFORMATION (PI1802A1):

N Code: N99 C Code: C99

Model	Claim Type	Causal P/N	Qty.	Repair Description	Labor Op Code	Op Time	Replacement P/N	Qty.
TF (14-15MY)	R	39108 2GBE0	0	(PI1802A1) KSDS - ECU Logic Improvement	180119R0	0.3 M/H	N/A	0
QF (15MY)	R	39108 2GBH1	0	(PI1802A1) KSDS - ECU Logic Improvement	180A17R0	0.3 M/H	N/A	0

SUBJECT: KNOCK SENSOR DETECTION SYSTEM – ECU LOGIC IMPROVEMENT (PI1802)

WARRANTY INFORMATION (PI1802B):

N Code: N99 C Code: C99

Model	Claim Type	Causal P/N	Qty.	Repair Description	Labor Op Code	Op Time	Replacement P/N	Qty.
SL (16MY)	R	39107 2GCD5	0	(PI1802B) KSDS - ECU Logic Improvement	180108R0	0.3 M/H	N/A	0
JF (16MY)	R	39108 2GGC5	0	(PI1802B) KSDS - ECU Logic Improvement	180109R0	0.3 M/H	N/A	0
JFa (16MY)	R	39108 2GTK5	0	(PI1802B) KSDS - ECU Logic Improvement	180A25R0	0.3 M/H	N/A	0
UMa (16MY)	R	39100 2GGF0	0	(PI1802B) KSDS - ECU Logic Improvement	180A26R0	0.3 M/H	N/A	0

WARRANTY INFORMATION (PI1802C):

N Code: N99 C Code: C99

Model	Claim Type	Causal P/N	Qty.	Repair Description	Labor Op Code	Op Time	Replacement P/N	Qty.
QL (17MY)	R	39100 2GHS0	0	(PI1802C) KSDS - ECU Logic Improvement	180110R0	0.3 M/H	N/A	0
JF (17MY)	R	39108 2GGC5	0	(PI1802C) KSDS - ECU Logic Improvement	180109R0	0.3 M/H	N/A	0
JFa (17MY)	R	39108 2GTK5	0	(PI1802C) KSDS - ECU Logic Improvement	180A27R0	0.3 M/H	N/A	0
UMa (17MY)	R	39100 2GGF0	0	(PI1802C) KSDS - ECU Logic Improvement	180A28R0	0.3 M/H	N/A	0

SUBJECT: KNOCK SENSOR DETECTION SYSTEM – ECU LOGIC IMPROVEMENT (PI1802)

WARRANTY INFORMATION (PI1802D):

N Code: N99 C Code: C99

Model	Claim Type	Causal P/N	Qty.	Repair Description	Labor Op Code	Op Time	Replacement P/N	Qty.
QL (18MY)	R	39100 2GHS0	0	(PI1802D) KSDS - ECU Logic Improvement	180110R0	0.3 M/H	N/A	0
JF (18MY)	R	39108 2GGC5	0	(PI1802D) KSDS - ECU Logic Improvement	180109R0	0.3 M/H	N/A	0
JFa (18MY)	R	39108 2GTK5	0	(PI1802D) KSDS - ECU Logic Improvement	180A29R0	0.3 M/H	N/A	0
UMa (18MY)	R	39100 2GGF0	0	(PI1802D) KSDS - ECU Logic Improvement	180A30R0	0.3 M/H	N/A	0

★ NOTICE

VIN inquiry data for this repair is provided for tracking purposes only. Kia retailers should reference PI1802* when accessing the WebDCS system.

PE19-004

KIA

TAB 59_ PI1802_TSB_R6

	GROUP	MODEL
KIA	**Product Improvement**	**See Model List on Page 1**
	NUMBER	DATE
	1802 (Rev 6, 01/31/2019)	**July 2018**

PRODUCT IMPROVEMENT CAMPAIGN

SUBJECT: KNOCK SENSOR DETECTION SYSTEM - ECU LOGIC IMPROVEMENT (PI1802)

★ NOTICE

This bulletin has been revised to include additional information. New/revised sections of this bulletin are indicated by a black bar in the margin area.

This bulletin provides information related to a software update to the Engine Control Unit (ECU) to install the Knock Sensor Detection System (KSDS) in order to protect the engine from excessive connecting rod bearing damage. This update is for:

Year	Model	Engine	Production Date
2014	Optima (TF)	2.4L GDI	8/29/13 – 4/25/14
2015-2018	Optima (TF/QF/JF/JFa)	2.4L & 2.0T GDI	4/16/14 – 7/11/18
2014-2018	Sportage (SL/QL)	2.4L & 2.0T GDI	9/30/13 – 4/5/18
2015-2018	Sorento (XMa/UMa)	2.4L & 2.0T GDI	1/3/14 – 3/7/18

The KSDS detects vibrations indicating the onset of excessive connecting rod bearing wear. It is designed to alert the driver at an early stage of bearing wear before the occurrence of severe engine damage, including engine failure. If vibrations caused by bearing wear start to occur, the Malfunction Indicator Lamp (MIL) will blink continuously, and the vehicle will be placed in Limp Home Mode. This will reduce further damage to the engine and ensure that the vehicle occupants are not exposed to the risk of a more severe engine failure. At that time, Diagnostic Trouble Code ("DTC") P1326, specific to the KSDS, will be recorded in the ECU. The vehicle can continue to be operated for a limited time in Limp Home Mode, but it will accelerate slowly and have a reduced maximum speed. Also, engine RPMs will be limited to approximately 1800-2000 RPM.

Please note, since Kia launched this Product Improve Campaign, Kia has become aware that the KSDS software version installed on 2014-2015MY Optima vehicles before September 7, 2018 has an error and requires the installation of a new corrected software. Kia has identified all affected 2014-2015MY Optima vehicles which require the installation of the new corrected software, and these vehicles are identified under a separate campaign number, PI1802A1, in the WEBDCS.

Kia is requesting the completion of this Product Improvement Campaign on all affected vehicles. Before conducting the procedure, verify the vehicle is included in the list of affected VINs. Also, please have your KDS connected to the internet regularly to get the latest software updates available.

File Under: <Product Improvement>

Circulate To: ☒ **General Manager** ☒ **Service Manager** ☒ **Parts Manager**
☒ **Service Advisors** ☒ **Technicians** ☒ **Body Shop Manager** ☐ **Fleet Repair**

SUBJECT: KNOCK SENSOR DETECTION SYSTEM – ECU LOGIC IMPROVEMENT (PI1802)

★ NOTICE

To assure complete customer satisfaction, always remember to refer to WebDCS Warranty Coverage (validation) Inquiry Screen (Service → Warranty Coverage → Warranty Coverage Inquiry) for a list of any additional campaigns that may need to be performed on the vehicle before returning it to the customer.

ECU Upgrade Procedure:

To correct this condition, the ECU should be reprogrammed using the KDS download, as described in this bulletin.

Upgrade Event Name
374.XMa Theta 2.4GDI Knock Sensor Detection System (KSDS) ECU Upgrade
375.TF Theta 2.0/2.4GDI Knock Sensor Detection System (KSDS) ECU Upgrade
376.SL Theta 2.0/2.4GDI Knock Sensor Detection System (KSDS) ECU Upgrade
377.QF Theta 2.0/2.4GDI Knock Sensor Detection System (KSDS) ECU Upgrade
392. UMa THETA 2.0/2.4 Knock Sensor Detection System (KSDS) ECU Upgrade (16MY)
393. JF/JFa THETA 2.0/2.4 Knock Sensor Detection System (KSDS) ECU Upgrade (16MY)
394. SL THETA 2.0/2.4 Knock Sensor Detection System (KSDS) ECU Upgrade (16MY)
398. UMA THETA 2.0/2.4 Knock Sensor Detection System(KSDS) ECU UPGRADE (17MY)
399. JF/JFA THETA 2.0/2.4 Knock Sensor Detection System(KSDS) ECU UPGRADE (17MY)
400. QL THETA 2.0/2.4 Knock Sensor Detection System(KSDS) ECU UPGRADE (17MY)
402.UMA THETA 2.0/2.4 Knock Sensor Detection System(KSDS) ECU UPGRADE (18MY)
403.JF/JFA THETA 2.0/2.4 Knock Sensor Detection System(KSDS) ECU UPGRADE (18MY)
404.QL THETA 2.0/2.4 Knock Sensor Detection System(KSDS) ECU UPGRADE (18MY)

★ NOTICE

- **A fully charged battery is necessary before ECU upgrade can take place. It is recommended that the Midtronics GR8-1299 system be used in ECU mode during charging. DO NOT connect any other battery charger to the vehicle during ECU upgrade.**
- **All ECU upgrades must be done with the ignition key in the 'ON' position.**
- **Be careful not to disconnect the VCI-II connected to the vehicle during the ECU upgrade procedure.**
- **DO NOT start the engine during ECU upgrade.**
- **DO NOT turn the ignition key 'OFF' or interrupt the power supply during ECU upgrade.**
- **When the ECU upgrade is completed, turn the ignition 'OFF' and wait 10 seconds before starting the engine.**
- **ONLY use approved ECU upgrade software designated for the correct model, year.**

⚠ CAUTION

Before attempting an ECU upgrade on any Kia model, make sure to first determine whether the particular model is equipped with an immobilizer security system. Failure to follow proper procedures may cause the PCM to become inoperative after the upgrade and any claims associated with this repair may be subject to chargeback.

★ NOTICE

For Optima models included in this TSB:
VINs that start with 5XX are designated Optima (QF/JFa) and produced in the United States.
VINs that start with KNA are designated Optima (TF/JF) are produced in South Korea.

SUBJECT: KNOCK SENSOR DETECTION SYSTEM – ECU LOGIC IMPROVEMENT (PI1802)

ROM ID INFORMATION TABLE:

Upgrade Event #374 (15 XMa), #375 (14/15 TF), #376 (14/15 SL), #377 (15 QF), #392 (16 UMa), #393 (16 JF/JFa), #394 (16 SL), #398 (17 UMa), #399 (17 JF/JFa), #400 (17 QL), #398 (17 UMa), #399 (17 JF/JFa), #400 (17 QL).

Model	ENG	IMMO	ECU P/No.	ROM ID	
				Previous	New
15MY Sor. (XMa)	2.4 (ULEV)	Yes	39113-2GBK6 39113-2GBK7 39113-2GBL6 39113-2GBL7	FFC4RH2A FFC4RHAA FFC4RHAB	FFC4RHAL
		No	39113-2GBK1 39113-2GBK2 39113-2GBL1 39113-2GBL2	FFC4MH2A FFC4MHAA FFC4MHAB	FFC4MHAL
14MY Opt. (TF)	2.4 (ULEV)	Yes	39108-2GBF0 39118-2GBF0	TEC4RH2K TEC4RH2L TEC4RH25	TEC4RH26
		No	39108-2GBE0 39118-2GBE0	TEC4MH2K TEC4MH2L TEC4MH25	TEC4MH26
	2.4 (SULEV)	Yes	39108-2GBF5	TES4RH2K TES4RH2L TES4RH25	TES4RH26
		No	39108-2GBE5	TES4MH2K TES4MH2L TES4MH25	TES4MH26
15MY Opt. (TF)	2.4 (ULEV)	Yes	39108-2GBF1	TFC4RH4K TFC4RH4L TFC4RH45	TFC4RH46
		No	39108-2GBE1 39118-2GBE1	TFC4MH4K TFC4MH4L TFC4MH45	TFC4MH46
	2.4 (SULEV)	No	39108-2GBE6	TFS4MH4K TFS4MH4L TFS4MH45	TFS4MH46
14MY Opt. (TF)	2.0T (ULEV)	Yes	39108-2GBG5 39108-2GBG6	TEC0RH2K TEC0RH2L TEC0RH25	TEC0RH26
		No	39108-2GBG0 39108-2GBG1	TEC0MH2K TEC0MH2L TEC0MH25	TEC0MH26
15MY Opt. (TF)	2.0T (ULEV)	Yes	39108-2GBG7	TFC0RH4K TFC0RH4L TFC0RH45	TFC0RH46
14MY Spo. (SL)	2.4 (ULEV)	Yes	39107-2GCD0 39107-2GCE0 39117-2GCD0 39117-2GCE0	SEC4RH2A SEC4RH2B SEC4RH2C SEC4RH2D	SEC4RH2K
		No	39107-2GCD5 39107-2GCE5 39117-2GCD5 39117-2GCE5	SEC4MH2A SEC4MH2B SEC4MH2C SEC4MH2D	SEC4MH2K

SUBJECT: KNOCK SENSOR DETECTION SYSTEM – ECU LOGIC IMPROVEMENT (PI1802)

Model	ENG	IMMO	ECU P/No.	ROM ID	
				Previous	New
14MY Spo. (SL)	2.4 (SULEV)	Yes	39107-2GCG0	SES4RH2A SES4RH2B SES4RH2C SES4RH2D	SES4RH2K
		No	39107-2GCG5	SES4MH2A SES4MH2B SES4MH2C SES4MH2D	SES4MH2K
15MY Spo. (SL)	2.4 (ULEV)	Yes	39107-2GCD1 39107-2GCD2 39107-2GCE1 39107-2GCE2 39117-2GCD1 39117-2GCE1	SFC4RH4A SFC4RH4B	SFC4RH4K
		No	39107-2GCD6 39107-2GCD7 39107-2GCE6 39107-2GCE7 39117-2GCD6 39117-2GCE6	SFC4MH4A SFC4MH4B	SFC4MH4K
	2.4 (SULEV)	Yes	39107-2GCG1 39107-2GCG2	SFS4RH4A SFS4RH4B	SFS4RH4K
		No	39107-2GCG6 39107-2GCG7	SFS4MH4A SFS4MH4B	SFS4MH4K
14MY Spo. (SL)	2.0T (ULEV)	Yes	39107-2GCC0	SEC0RH2A	SEC0RH2K
		No	39107-2GCC5	SEC0MH2A	SEC0MH2K
	2.0T (ULEV)	Yes	39107-2GCC1 39107-2GCC2	SFC0RH4A	SFC0RH4K
		No	39107-2GCC6 39107-2GCC7	SFC0MH4A	SFC0MH4K
15MY Spo. (SL)	2.0T (ULEV)	Yes	39107-2GCC3	SGC0RH4A	SGC0RH4K
		No	39107-2GCC8	SGC0MH4A	SGC0MH4K
15MY Opt. (QF)	2.4 (ULEV)	Yes	39108-2GBJ1 39108-2GBJ2 39118-2GBJ1	TFC4RH4A TFC4RH4B TFC4RH41	TFC4RH42
		No	39108-2GBH1 39108-2GBH2 39118-2GBH1	TFC4MH4A TFC4MH4B TFC4MH41	TFC4MH42
	2.4 (SULEV)	Yes	39108-2GBJ6 39108-2GBJ7	TFS4RH4A TFS4RH4B TFS4RH41	TFS4RH42
		No	39108-2GBH6 39108-2GBH7	TFS4MH4A TFS4MH4B TFS4MH41	TFS4MH42
15MY Opt. (QF)	2.0T (ULEV)	Yes	39108-2GBK7 39108-2GBK8	TFC0RH4A TFC0RH4B TFC0RH41	TFC0RH42
		No	39108-2GBK2 39108-2GBK3	TFC0MH4A TFC0MH4B TFC0MH41	TFC0MH42

SUBJECT: KNOCK SENSOR DETECTION SYSTEM – ECU LOGIC IMPROVEMENT (PI1802)

Model	ENG	IMMO	ECU P/No.	ROM ID	
				Previous	New
16MY Sor. (UMa) 2WD	2.4 (ULEV)	Yes	39100-2GGF5	2WD_UMAFNC4ER91A 2WD_UMAFNC4ER92A 2WD_UMAGNC4ERA31 2WD_UMAFNC4ERA51 2WD_UMAFNC4ERA52	2WD_UMAFNC4ERA6K
			39100-2GGF6	2WD_UMAFNC4ERA3A 2WD_UMAFNC4ERA5A 2WD_UMAFNC4ERA5B 2WD_UMAFNC4ERA5C	2WD_UMAFNC4ERA6M
			39100-2GGF6	2WD_UMAHNC4ERA6B	2WD_UMAHNC4ERA6K
		No	39100-2GGF0	2WD_UMAFNC4EM91A 2WD_UMAFNC4EM92A 2WD_UMAGNC4EMA31 2WD_UMAFNC4EMA51 2WD_UMAFNC4EMA52	2WD_UMAFNC4EMA6K
			39100-2GGF1	2WD_UMAFNC4EMA3A 2WD_UMAFNC4EMA5A 2WD_UMAFNC4EMA5B 2WD_UMAFNC4EMA5C	2WD_UMAFNC4EMA6M
			39100-2GGF1	2WD_UMAHNC4EMA6B	2WD_UMAHNC4EMA6K
16MY Sor. (UMa) 4WD	2.4 (ULEV)	Yes	39100-2GGH5	4WD_UMAFNC4ER91A 4WD_UMAFNC4ER92A 4WD_UMAGNC4ERA31 4WD_UMAFNC4ERA51 4WD_UMAFNC4ERA52	4WD_UMAFNC4ERA6O
			39100-2GGH6	4WD_UMAFNC4ERA3A 4WD_UMAFNC4ERA5A 4WD_UMAFNC4ERA5B 4WD_UMAFNC4ERA5C	4WD_UMAFNC4ERA6P
			39100-2GGH6	4WD_UMAHNC4ERA6B	4WD_UMAHNC4ERA6L
		No	39100-2GGH0	4WD_UMAFNC4EM91A 4WD_UMAFNC4EM92A 4WD_UMAGNC4EMA31 4WD_UMAFNC4EMA51 4WD_UMAFNC4EMA52	4WD_UMAFNC4EMA6O
			39100-2GGH1	4WD_UMAFNC4EMA3A 4WD_UMAFNC4EMA5A 4WD_UMAFNC4EMA5B 4WD_UMAFNC4EMA5C	4WD_UMAFNC4EMA6P
			39100-2GGH1	4WD_UMAHNC4EMA6B	4WD_UMAHNC4EMA6L
16MY Sor. (UMa) 2WD	2.0T (ULEV)	Yes	39100-2GTC6	2WD_UMAGNC0ERA3A 2WD_UMAGNC0ERA5A 2WD_UMAGNC0ERA61	2WD_UMAGNC0ERA6K
			39100-2GTC5	2WD_UMAFNC0ER92A 2WD_UMAFNC0ER921 2WD_UMAFNC0ER91A	2WD_UMAFNC0ER92K
		No	39100-2GTC1	2WD_UMAGNC0EMA3A 2WD_UMAGNC0EMA5A 2WD_UMAGNC0EMA61	2WD_UMAGNC0EMA6K
			39100-2GTC0	2WD_UMAFNC0EM92A 2WD_UMAFNC0EM921 2WD_UMAFNC0EM91A	2WD_UMAFNC0EM92K

SUBJECT: KNOCK SENSOR DETECTION SYSTEM – ECU LOGIC IMPROVEMENT (PI1802)

Model	ENG	IMMO	ECU P/No.	ROM ID	
				Previous	New
16MY Sor. (UMa) 4WD	2.0T (ULEV)	Yes	39100-2GTD6	4WD_UMAGNC0ERA3A 4WD_UMAGNC0ERA5A 4WD_UMAGNC0ERA61	4WD_UMAGNC0ERA6L
			39100-2GTD5	4WD_UMAFNC0ER92A 4WD_UMAFNC0ER921 4WD_UMAFNC0ER91A	4WD_UMAFNC0ER92L
		No	39100-2GTD1	4WD_UMAGNC0EMA3A 4WD_UMAGNC0EMA5A 4WD_UMAGNC0EMA61	4WD_UMAGNC0EMA6L
			39100-2GTD0	4WD_UMAFNC0EM92A 4WD_UMAFNC0EM921 4WD_UMAFNC0EM91A	4WD_UMAFNC0EM92A 4WD_UMAFNC0EM92L
16MY Opt. (JF/JFa)	2.4 (ULEV)	Yes	39108-2GGC5	JFAGNC4ERB0A JFAGNC4ERB0B JFAGNC4ERC0A JFAGNC4ERC3A	JFAGNC4ERC3K
			39108-2GGC5	JFAGNC4ERD11	JFAGNC4ERD1K
		No	39108-2GGC0	JFAGNC4EMB0A JFAGNC4EMB0B JFAGNC4EMC0A JFAGNC4EMC3A	JFAGNC4EMC3K
			39108-2GGC0	JFAGNC4EMD11	JFAGNC4EMD1K
	2.4 (SULEV)	Yes	39108-2GGD5	JFAGNS4ERB0A JFAGNS4ERB0B JFAGNS4ERC0A JFAGNS4ERC3A	JFAGNS4ERC3K
			39108-2GGD5	JFAGNS4ERD11	JFAGNS4ERD1K
		No	39108-2GGD0	JFAGNS4EMB0A JFAGNS4EMB0B JFAGNS4EMC0A JFAGNS4EMC3A	JFAGNS4EMC3K
			39108-2GGD0	JFAGNS4EMD11	JFAGNS4EMD1K
16MY Opt. (JFa)	2.0T (ULEV)	Yes	39108-2GTK5	JFAGNC0ERB0A JFAGNC0ERB0B JFAGNC0ERB4A	JFAGNC0ERB4K
		No	39108-2GTK0	JFAGNC0EMB0A JFAGNC0EMB0B JFAGNC0EMB4A	JFAGNC0EMB4K
16MY Spo. (SL)	2.4 (ULEV)	Yes	39107-2GCD3 39107-2GCE3 39117-2GCD3 39117-2GCE3	SGC4RH4A SGC4RH4B	SGC4RH4K
		No	39107-2GCD8 39107-2GCE8 39117-2GCD8 39117-2GCE8	SGC4MH4A SGC4MH4B	SGC4MH4K
	2.4 (SULEV)	Yes	39107-2GCG3	SGS4RH4A SGS4RH4B	SGS4RH4K
		No	39107-2GCG8	SGS4MH4A SGS4MH4B	SGS4MH4K
	2.0T (ULEV)	Yes	39107-2GCC3	SGC0RH4A	SGC0RH4K
		No	39107-2GCC8	SGC0MH4A	SGC0MH4K

SUBJECT: KNOCK SENSOR DETECTION SYSTEM – ECU LOGIC IMPROVEMENT (PI1802)

Model	ENG	IMMO	ECU P/No.	ROM ID	
				Previous	New
17MY Sor. (UMa) 2WD	2.4 (ULEV)	Yes	39100-2GGF7	UMAHNC4ERA5A UMAHNC4ERA5B UMAHNC4ERA6A UMAHNC4ERA6B	UMAHNC4ERA6K
		No	39100-2GGF2	UMAHNC4EMA5A UMAHNC4EMA5B UMAHNC4EMA6A UMAHNC4EMA6B	UMAHNC4EMA6K
17MY Sor. (UMa) 4WD	2.4 (ULEV)	Yes	39100-2GGH7	UMAHNC4ERA5A UMAHNC4ERA5B UMAHNC4ERA6A UMAHNC4ERA6B	UMAHNC4ERA6L
		No	39100-2GGH2	UMAHNC4EMA5A UMAHNC4EMA5B UMAHNC4EMA6A UMAHNC4EMA6B	UMAHNC4EMA6L
17MY Sor. (UMa) 2WD	2.0T (ULEV)	Yes	39100-2GTC7	UMAHNC0ERA5A UMAHNC0ERA6A UMAHNC0ERA6B	UMAHNC0ERA6K
		No	39100-2GTC2	UMAHNC0EMA5A UMAHNC0EMA6A UMAHNC0EMA6B	UMAHNC0EMA6K
17MY Sor. (UMa) 4WD	2.0T (ULEV)	Yes	39100-2GTD7	UMAHNC0ERA5A UMAHNC0ERA6A UMAHNC0ERA6B	UMAHNC0ERA6L
		No	39100-2GTD2	UMAHNC0EMA5A UMAHNC0EMA6A UMAHNC0EMA6B	UMAHNC0EMA6L
17MY Opt. (JF/JFa)	2.4 (ULEV)	Yes	39108-2GGC6	JFAHNC4ERC3A JFAHNC4ERC3B	JFAHNC4ERC31
			39108-2GGC8	JFAHNC4ERD1A	JFAHNC4ERD11
		No	39108-2GGC1	JFAHNC4EMC3A JFAHNC4EMC3B	JFAHNC4EMC31
			39108-2GGC3	JFAHNC4EMD1A	JFAHNC4EMD11
			39108-2GGL1	JFAHNC4EMC3K JFAHNC4EMC3L	JFAHNC4EMC35
			39108-2GGL2	JFAHNC4EMD1K	JFAHNC4EMD15
	2.4 (SULEV)	Yes	39108-2GGD6	JFAHNS4ERC3A JFAHNS4ERC3B	JFAHNS4ERC31
			39108-2GGD8	JFAHNS4ERD1A	JFAHNS4ERD11
		No	39108-2GGD1	JFAHNS4EMC3A JFAHNS4EMC3B	JFAHNS4EMC31
			39108-2GGD3	JFAHNS4EMD1A	JFAHNS4EMD11
			39108-2GGM1	JFAHNS4EMC3K JFAHNS4EMC3L	JFAHNS4EMC35
			39108-2GGM2	JFAHNS4EMD1K	JFAHNS4EMD15

SUBJECT: KNOCK SENSOR DETECTION SYSTEM – ECU LOGIC IMPROVEMENT (PI1802)

Model	ENG	IMMO	ECU P/No.	ROM ID	
				Previous	New
17MY Opt. (JFa)	2.0T (ULEV)	Yes	39108-2GTK6	JFAHNC0ERC3A JFAHNC0ERC3B	JFAHNC0ERC3K
		No	39108-2GTK1	JFAHNC0EMC3A JFAHNC0EMC3B	JFAHNC0EMC3K
17MY Spo. (QL) 2WD	2.4 (ULEV)	Yes	39100-2GHR5	QLDHNC4ERB2A QLDHNC4ERB4A QLDHNC4ERB4B QLDGNC4ERB2A	QLDHNC4ERB41
		No	39100-2GHS0	QLDHNC4EMB2A QLDHNC4EMB4A QLDHNC4EMB4B QLDGNC4EMB2A	QLDHNC4EMB41
	2.4 (SULEV)	Yes	39100-2GHT5	QLDHNS4ERB2A QLDHNS4ERB4A QLDHNS4ERB4B QLDGNS4ERB2A	QLDHNS4ERB41
		No	39100-2GHV0	QLDHNS4EMB2A QLDHNS4EMB4A QLDHNS4EMB4B QLDGNS4EMB2A	QLDHNS4EMB41
17MY Spo. (QL) 4WD	2.4 (ULEV)	Yes	39100-2GHS5	QLDHNC4ERB2K QLDHNC4ERB4K QLDHNC4ERB4L QLDGNC4ERB2K	QLDHNC4ERB45
		No	39100-2GHT0	QLDHNC4EMB2K QLDHNC4EMB4K QLDHNC4EMB4L QLDGNC4EMB2K	QLDHNC4EMB45
	2.4 (SULEV)	Yes	39100-2GHV5	QLDHNS4ERB2K QLDHNS4ERB4K QLDHNS4ERB4L QLDGNS4ERB2K	QLDHNS4ERB45
		No	39100-2GHW0	QLDHNS4EMB2K QLDHNS4EMB4K QLDHNS4EMB4L QLDGNS4EMB2K	QLDHNS4EMB45
17MY Spo. (QL) 2WD	2.0T (ULEV)	Yes	39100-2GHJ0	QLDGNC0ERB2A QLDHNC0ERB4A QLDHNC0ERB4B QLDHNC0ERB4C	QLDHNC0ERB41
		No	39100-2GHJ5	QLDGNC0EMB2A QLDHNC0EMB4A QLDHNC0EMB4B QLDHNC0EMB4C	QLDHNC0EMB41
17MY Spo. (QL) 4WD	2.0T (ULEV)	Yes	39100-2GHK0	QLDGNC0ERB2K QLDHNC0ERB4K QLDHNC0ERB4L QLDHNC0ERB4M	QLDHNC0ERB45
		No	39100-2GHK5	QLDGNC0EMB2K QLDHNC0EMB4K QLDHNC0EMB4L QLDHNC0EMB4M	QLDHNC0EMB45

SUBJECT: KNOCK SENSOR DETECTION SYSTEM – ECU LOGIC IMPROVEMENT (PI1802)

Model	ENG	IMMO	ECU P/No.	ROM ID	
				Previous	New
18MY Sor. (UMa) 2WD	2.4 (ULEV)	Yes	39100-2GGF8	UMAINC4ERA6A UMAINC4ERA7A UMAINC4ERA7B UMAINC4ERD5A UMAINC4ERD5B	UMAINC4ERD5K
		No	39100-2GGF3	UMAINC4EMA6A UMAINC4EMA7A UMAINC4EMA7B UMAINC4EMD5A UMAINC4EMD5B	UMAINC4EMD5K
18MY Sor. (UMa) 4WD	2.4 (ULEV)	Yes	39100-2GGH8	UMAINC4ERA6A UMAINC4ERA7A UMAINC4ERA7B UMAINC4ERD5A UMAINC4ERD5B	UMAINC4ERD5L
		No	39100-2GGH3	UMAINC4EMA6A UMAINC4EMA7A UMAINC4EMA7B UMAINC4EMD5A UMAINC4EMD5B	UMAINC4EMD5L
18MY Sor. (UMa) 2WD	2.0T (ULEV)	Yes	39100-2GTC8	UMAINC0ERA6A UMAINC0ERA7A UMAINC0ERA7B UMAINC0ERA7C	UMAINC0ERA8K
		No	39100-2GTC3	UMAINC0EMA6A UMAINC0EMA7A UMAINC0EMA7B UMAINC0EMA7C	UMAINC0EMA8K
18MY Sor. (UMa) 4WD	2.0T (ULEV)	Yes	39100-2GTD8	UMAINC0ERA6A UMAINC0ERA7A UMAINC0ERA7B UMAINC0ERA7C	UMAINC0ERA8L
		No	39100-2GTD3	UMAINC0EMA6A UMAINC0EMA7A UMAINC0EMA7B UMAINC0EMA7C	UMAINC0EMA8L
18MY Opt. (JF/JFa)	2.4 (ULEV)	Yes	39108-2GGC7	JFAINC4ERDAA JFAINC4ERDAB JFAINC4ERD5A JFAINC4ERD5B	JFAINC4ERD5K
		No	39108-2GGC2	JFAINC4EMDAA JFAINC4EMDAB JFAINC4EMD5A JFAINC4EMD5B	JFAINC4EMD5K
	2.4 (SULEV)	Yes	39108-2GGD7	JFAINS4ERDAA JFAINS4ERDAB JFAINS4ERD5A JFAINS4ERD5B	JFAINS4ERD5K
		No	39108-2GTK7	JFAINC0ERCAA JFAINC0ERCAB JFAINC0ERCAC	JFAINC0ERCAK

SUBJECT: KNOCK SENSOR DETECTION SYSTEM – ECU LOGIC IMPROVEMENT (PI1802)

Model	ENG	IMMO	ECU P/No.	ROM ID	
				Previous	New
18MY Opt. (JFa)	2.0T (ULEV)	Yes	39108-2GTK7	JFAINC0ERCAA JFAINC0ERCAB JFAINC0ERCAC	JFAINC0ERCAK
		No	39108-2GTK2	JFAINC0EMCAA JFAINC0EMCAB JFAINC0EMCAC	JFAINC0EMCAK
18MY Spo. (QL) 2WD	2.4 (ULEV)	Yes	39100-2GHR6	QLDINC4ERC3A QLDINC4ERCAA QLDINC4ERCAB QLDINC4ERD5A	QLDINC4ERD51
		No	39100-2GHS1	QLDINC4EMC3A QLDINC4EMCAA QLDINC4EMCAB QLDINC4EMD5A	QLDINC4EMD51
	2.4 (SULEV)	Yes	39100-2GHT6	QLDINS4ERC3A QLDINS4ERCAA QLDINS4ERCAB QLDINS4ERD5A	QLDINS4ERD51
		No	39100-2GHV1	QLDINS4EMC3A QLDINS4EMCAA QLDINS4EMCAB QLDINS4EMD5A	QLDINS4EMD51
18MY Spo. (QL) 4WD	2.4 (ULEV)	Yes	39100-2GHS6	QLDINC4ERC3K QLDINC4ERCAK QLDINC4ERCAM QLDINC4ERD5K	QLDINC4ERD55
		No	39100-2GHT1	QLDINC4EMC3K QLDINC4EMCAK QLDINC4EMCAM QLDINC4EMD5K	QLDINC4EMD55
	2.4 (SULEV)	Yes	39100-2GHV6	QLDINS4ERC3K QLDINS4ERCAK QLDINS4ERCAM QLDINS4ERD5K	QLDINS4ERD55
		No	39100-2GHW1	QLDINS4EMC3K QLDINS4EMCAK QLDINS4EMCAM QLDINS4EMD5K	QLDINS4EMD55
18MY Spo. (QL) 2WD	2.0T (ULEV)	Yes	39100-2GHJ1	QLDINC0ERB4A QLDINC0ERB5A QLDINC0ERB5B QLDINC0ERD5A	QLDINC0ERD51
		No	39100-2GHJ6	QLDINC0EMB4A QLDINC0EMB5A QLDINC0EMB5B QLDINC0EMD5A	QLDINC0EMD51
18MY Spo. (QL) 4WD	2.0T (ULEV)	Yes	39100-2GHK1	QLDINC0ERB4K QLDINC0ERB5K QLDINC0ERB5M QLDINC0ERD5K	QLDINC0ERD55
		No	39100-2GHK6	QLDINC0EMB4K QLDINC0EMB5K QLDINC0EMB5M QLDINC0EMD5K	QLDINC0EMD55

To verify the vehicle is affected, be sure to check the Calibration Identification of the vehicle's ECM ROM ID and reference the Information Table as necessary.

SUBJECT: KNOCK SENSOR DETECTION SYSTEM – ECU LOGIC IMPROVEMENT (PI1802)

★ NOTICE

Prior to performing the ECU upgrade, be sure to check that the KDS is fully charged.

1. Connect the VCI-II to the OBD-II connector, located under the driver's side of the instrument panel.



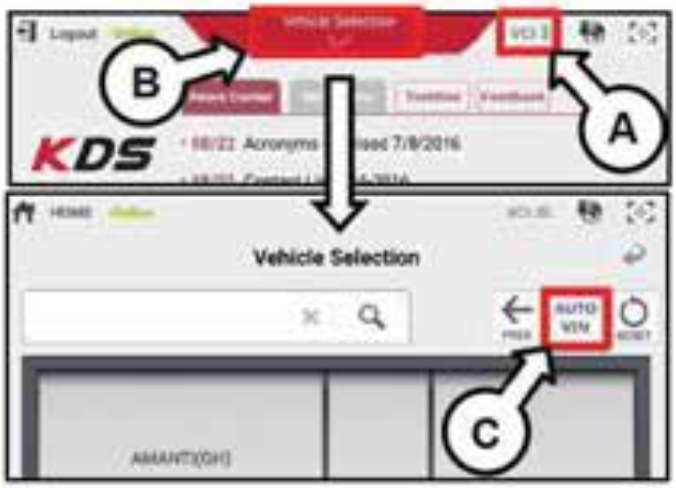
★ NOTICE

The ECU upgrade function on KDS operates wirelessly. It is not necessary to perform the upgrade via USB cable.

2. With the ignition ON, turn ON the KDS tablet. Select **KDS** from the home screen.



3. Confirm communication with VCI (A) and then configure the vehicle (B) using the **AUTO VIN** (C) feature.



4. Select **ECU Upgrade**.



SUBJECT: KNOCK SENSOR DETECTION SYSTEM – ECU LOGIC IMPROVEMENT (PI1802)

5. The KDS will check the server for recently uploaded Events and then automatically download the applicable **Upgrade Event**, listed on page 3.

★ NOTICE

The vehicle must be identified in Vehicle Selection to download an Event for that vehicle.



KDS screenshot shown above is for demonstration purposes only. Events shown in screenshot are not applicable to this bulletin.

6. Select **Auto Mode**.

★ NOTICE

Do NOT attempt to perform a Manual Mode upgrade UNLESS Auto Mode fails. Always follow the instructions given on the KDS in either Auto or Manual mode.



7. Select the **ENGINE** system under the System selection menu.

   Touch **ID Check** (D) and confirm that the latest update is available.

   Select the applicable **Upgrade Event** and select **Upgrade** to continue.

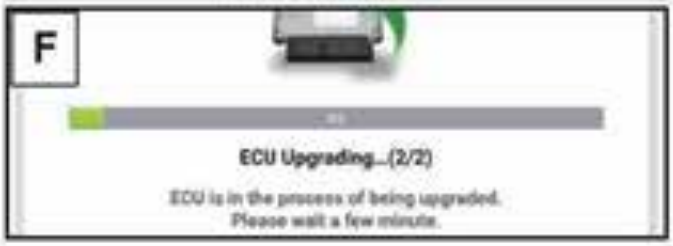


8. The ECU upgrade will begin and the progress of the upgrade will appear on the bar graph. Upgrade part (1/2) (E) will download the upgrade event to the VCI-II. Upgrade part (2/2) (F) will upgrade the ECU.

★ NOTICE

Do not touch the system buttons (like 'Back', 'Home', 'etc.') while performing ECU Upgrade.





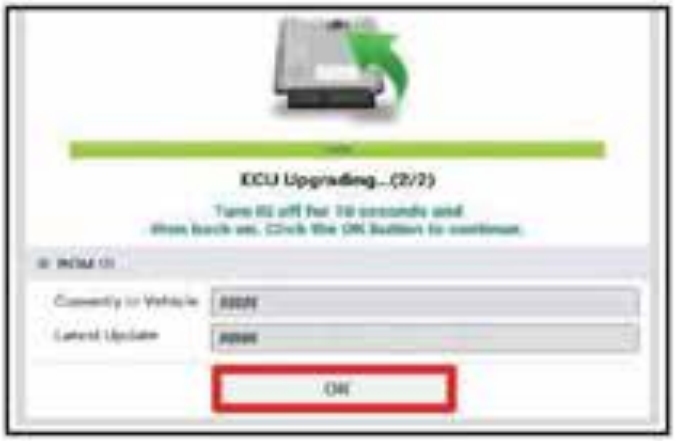
9. If a "Communication Fail" screen appears, verify that the VCI-II and KDS are communicating properly. Touch **OK** and restart the procedure from step 4.



★ NOTICE

If an error notice continues to appear or if the upgrade cannot be performed, DO NOT disconnect the KDS/VCI-II. Contact GIT America Help Desk at (888) 542-4371 or Techline.

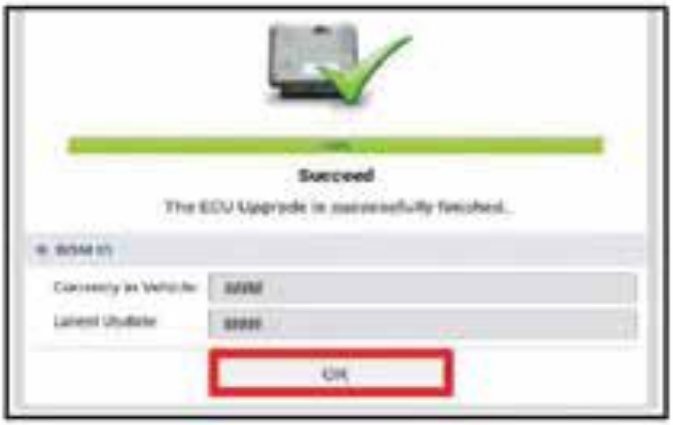
10. When instructed on the KDS, turn the ignition **OFF** for ten (10) seconds then back on. Touch **OK** to continue.



★ NOTICE

If applicable and instructed on the KDS, leave the ignition ON for five (5) seconds to perform ETC Adaptive Learning.

11. Once the upgrade is complete, touch **OK** to finalize the procedure.



12. When prompted, select **YES** to check for Diagnostic Trouble Codes (DTC) and erase any DTCs stored such as EPS, ESC, and TPMS that may have been set during the upgrade.



13. Start the engine to confirm proper operation of the vehicle.

SUBJECT: KNOCK SENSOR DETECTION SYSTEM – ECU LOGIC IMPROVEMENT (PI1802)

Manual Upgrade Procedure:

★ NOTICE

The manual upgrade should ONLY be performed if the automatic upgrade fails.

If the automatic upgrade fails, turn the ignition OFF for about 10 seconds then place it back in the ON position to reset the control unit BEFORE performing manual upgrade.

See table below for Manual Mode passwords.

Manual Mode ECU Upgrade Passwords (14-15MY)

Model	Menu	Pass.
XMa 2.4	XMA 2.4GDI -IMMO : 39113-2GBK1/K2/L1/L2	1322
	XMA 2.4GDI +IMMO/SMK : 39113-2GBK8/K7/L6/L7	1327
TF 2.0T	TF F/L 2.0 TGDI 14MY(ULEV) -IMMO : 39108-2GBG0/G1	8201
	TF F/L 2.0 TGDI 14MY(ULEV) +IMMO/SMK : 39108-2GBG5/G6	8256
	TF F/L 2.0 TGDI 15MY(ULEV) +IMMO/SMK : 39108-2GBG7	0827
TF 2.4	TF F/L 2.4 GDI 14MY(ULEV) -IMMO : 39108/18-2GBE0	1820
	TF F/L 2.4 GDI 14MY(ULEV) +IMMO/SMK : 39108/18-2GBF0	1821
	TF F/L 2.4 GDI 14MY(SULEV) -IMMO : 39108-2GBE5	0828
	TF F/L 2.4 GDI 14MY(SULEV) +IMMO/SMK : 39108-2GBF5	0829
	TF F/L 2.4 GDI 15MY(ULEV) -IMMO : 39108/18-2GBE1	1822
	TF F/L 2.4 GDI 15MY(ULEV) +IMMO/SMK : 39108-2GBF1	0821
	TF F/L 2.4 GDI 15MY(SULEV) -IMMO : 39108-2GBE6	0826
SL 2.0T	SL 2.0 TGDI 14MY(ULEV) -IMMO : 39107-2GCC5	0725
	SL 2.0 TGDI 14MY(ULEV) +IMMO/SMK : 39107-2GCC0	0720
	SL 2.0 TGDI 15MY(ULEV) -IMMO : 39107-2GCC6/C7	7267
	SL 2.0 TGDI 15MY(ULEV) +IMMO/SMK : 39107-2GCC1/C2	7212
	SL 2.0T-GDI -IMMO 6AT 15MY (ULEV) : 39107-2GCC8	0729
	SL 2.0T-GDI +IMMO/SMK 6AT 15MY (ULEV) : 39107-2GCC3	0724
SL 2.4	SL 2.4 GDI 14MY(ULEV) -IMMO : 39107/17-2GCD5/E5	7255
	SL 2.4 GDI 14MY(ULEV) +IMMO/SMK : 39107/17-2GCD0/E0	7200
	SL 2.4 GDI 14MY(SULEV) -IMMO : 39107-2GCG5	0726
	SL 2.4 GDI 14MY(SULEV) +IMMO/SMK : 39107-2GCG0	0721
	SL 2.4 GDI 15MY(ULEV) -IMMO : 39107-2GCD6/D7/E6/E7, 39117-2GCD6/E6	7266
	SL 2.4 GDI 15MY(ULEV) +IMMO/SMK : 39107-2GCD1/D2/E1/E2, 39117-2GCD1/E1	7211
	SL 2.4 GDI 15MY(SULEV) -IMMO : 39107-2GCG6/G7	7268
	SL 2.4 GDI 15MY(SULEV) +IMMO/SMK : 39107-2GCG1/G2	7213
QF 2.0T	QF 2.0 TGDI 15MY(ULEV) -IMMO : 39108-2GBK2/K3	0823
	QF 2.0 TGDI 15MY(ULEV) +IMMO/SMK : 39108-2GBK7/K8	0828
QF 2.4	QF 2.4 GDI 15MY(ULEV) -IMMO : 39108-2GBH1/H2, 39118-2GBH1	1821
	QF 2.4 GDI 15MY(ULEV) +IMMO/SMK : 39108-2GBJ1/J2, 39118-2GBJ1	1822
	QF 2.4 GDI 15MY(SULEV) -IMMO : 39108-2GBH6/H7	0827
	QF 2.4 GDI 15MY(SULEV) +IMMO/SMK : 39108-2GBJ6/J7	0829

SUBJECT: KNOCK SENSOR DETECTION SYSTEM – ECU LOGIC IMPROVEMENT (PI1802)

Manual Mode ECU Upgrade Passwords (16MY)

Model	Menu	Pass.
UMa 2.4	UMA 2.4GDI -IMMO 6AT 15~16MY(2WD/ULEV) : 39100-2GGF0 [2WD_UMAFNC4EM91A/92A/A31/A51/A52]	0020
	UMA 2.4GDI +IMMO/SMK 6AT 15~16MY(2WD/ULEV) : 39100-2GGF5 [2WD_UMAFNC4ER91A/92A/A31/A51/A52]	0025
	UMA 2.4GDI -IMMO 6AT 15~16MY(4WD/ULEV) : 39100-2GGH0 [4WD_UMAFNC4EM91A/92A/A31/A51/A52]	0021
	UMA 2.4GDI +IMMO/SMK 6AT 15~16MY(4WD/ULEV) : 39100-2GGH5 [4WD_UMAFNC4ER91A/92A/A31/A51/A52]	0026
	UMA 2.4GDI -IMMO 6AT 15~16MY(2WD/ULEV) : 39100-2GGF1 [2WD_UMAFNC4EMA3A/5A/5B/5C]	0022
	UMA 2.4GDI +IMMO/SMK 6AT 15~16MY(2WD/ULEV) : 39100-2GGF6 [2WD_UMAFNC4ERA3A/5A/5B/5C]	0027
	UMA 2.4GDI -IMMO 6AT 15~16MY(4WD/ULEV) : 39100-2GGH1 [4WD_UMAFNC4EMA3A/5A/5B/5C]	0023
	UMA 2.4GDI +IMMO/SMK 6AT 15~16MY(4WD/ULEV) : 39100-2GGH6 [4WD_UMAFNC4ERA3A/5A/5B/5C]	0028
	UMA 2.4 GDI 6AT -IMMO 15~16MY (2WD/ULEV) : 39100-2GGF1 [2WD_UMAHNC4EMA6B]	3981
	UMA 2.4 GDI 6AT +IMMO/SMK 15~16MY (2WD/ULEV) : 39100-2GGF6 [2WD_UMAHNC4ERA6B]	3982
	UMA 2.4 GDI 6AT -IMMO 15~16MY (4WD/ULEV) : 39100-2GGH1 [4WD_UMAHNC4EMA6B]	3983
	UMA 2.4 GDI 6AT +IMMO/SMK 15~16MY (4WD/ULEV) : 39100-2GGH6 [4WD_UMAHNC4ERA6B]	3984
UMa 2.0T	UMA 2.0T-GDI -IMMO 6AT 15MY(2WD/ULEV) : 39100-2GTC0 [2WD_UMAFNC0EM92A/1,91A]	2020
	UMA 2.0T-GDI +IMMO/SMK 6AT 15MY(2WD/ULEV) : 39100-2GTC5 [2WD_UMAFNC0ER92A/1,91A]	2025
	UMA 2.0T-GDI -IMMO 6AT 15MY(4WD/ULEV) : 39100-2GTD0 [4WD_UMAFNC0EM92A/1,91A]	2021
	UMA 2.0T-GDI +IMMO/SMK 6AT 15MY(4WD/ULEV) : 39100-2GTD5 [4WD_UMAFNC0ER92A/1,91A]	2026
	UMA 2.0T-GDI -IMMO 6AT 16MY(2WD/ULEV) : 39100-2GTC1 [2WD_UMAGNC0EMA3A/5A/61]	2022
	UMA 2.0T-GDI +IMMO/SMK 6AT 16MY(2WD/ULEV) : 39100-2GTC6 [2WD_UMAGNC0ERA3A/5A/61]	2027
	UMA 2.0T-GDI -IMMO 6AT 16MY(4WD/ULEV) : 39100-2GTD1 [4WD_UMAGNC0EMA3A/5A/61]	2023
	UMA 2.0T-GDI +IMMO/SMK 6AT 16MY(4WD/ULEV) : 39100-2GTD6 [4WD_UMAGNC0ERA3A/5A/61]	2028
JF/JFa 2.4	JF/JFA 2.4GDI -IMMO 6AT 16MY (ULEV) : 39108-2GGC0 [JFAGNC4EMB0A/B0B/C0A/C3A]	0820
	JF/JFA 2.4GDI +IMMO/SMK 6AT 16MY (ULEV) : 39108-2GGC5 [JFAGNC4ERB0A/B0B/C0A/C3A]	0825
	JF/JFA 2.4GDI -IMMO 6AT 16MY (SULEV) : 39108-2GGD0 [JFAGNS4EMB0A/B0B/C0A/C3A]	0821
	JF/JFA 2.4GDI +IMMO/SMK 6AT 16MY (SULEV) : 39108-2GGD5 [JFAGNS4ERB0A/B0B/C0A/C3A]	0826
	JF/JFA 2.4GDI -IMMO 6AT 16MY (ULEV) : 39108-2GGC0 [JFAGNC4EMD11]	0822
	JF/JFA 2.4GDI +IMMO/SMK 6AT 16MY (ULEV) : 39108-2GGC5 [JFAGNC4ERD11]	0827
	JF/JFA 2.4GDI -IMMO 6AT 16MY (SULEV) : 39108-2GGD0 [JFAGNS4EMD11]	0823
	JF/JFA 2.4GDI +IMMO/SMK 6AT 16MY (SULEV) : 39108-2GGD5 [JFAGNS4ERD11]	0828
JFa 2.0T	JFA 2.0T-GDI -IMMO 6AT 16MY (ULEV) : 39108-2GTK0	0824
	JFA 2.0T-GDI +IMMO/SMK 6AT 16MY (ULEV) : 39108-2GTK5	0829
SL 2.4	SL 2.4GDI -IMMO 6AT/MT 16MY (ULEV) : 39107/17-2GCD8/E8	1728
	SL 2.4GDI +IMMO/SMK 6AT/MT 16MY (ULEV) : 39107/17-2GCD3/E3	1723
	SL 2.4GDI -IMMO 6AT 16MY (SULEV) : 39107-2GCG8	0728
	SL 2.4GDI +IMMO/SMK 6AT 16MY (SULEV) : 39107-2GCG3	0723
SL 2.0T	SL 2.0T-GDI -IMMO 6AT 16MY (ULEV) : 39107-2GCC8	0729
	SL 2.0T-GDI +IMMO/SMK 6AT 16MY (ULEV) : 39107-2GCC3	0724

SUBJECT: KNOCK SENSOR DETECTION SYSTEM – ECU LOGIC IMPROVEMENT (PI1802)

Manual Mode ECU Upgrade Passwords (17MY)

Model	Menu	Pass.
UMa 2.4	UMA 2.4 GDI 6AT -IMMO 17MY (2WD/ULEV) : 39100-2GGF2 [2WD_UMAHNC4EMA5A/A5B/A6A/A6B]	0022
	UMA 2.4 GDI 6AT +IMMO/SMK 17MY (2WD/ULEV) : 39100-2GGF7 [2WD_UMAHNC4ERA5A/A5B/A6A/A6B]	0027
	UMA 2.4 GDI 6AT -IMMO 17MY (4WD/ULEV) : 39100-2GGH2 [4WD_UMAHNC4EMA5A/A5B/A6A/A6B]	0023
	UMA 2.4 GDI 6AT +IMMO/SMK 17MY (4WD/ULEV) : 39100-2GGH7 [4WD_UMAHNC4ERA5A/A5B/A6A/A6B]	0028
UMa 2.0T	UMA 2.0T-GDI 6AT -IMMO 17MY (2WD/ULEV) : 39100-2GTC2 [2WD_UMAHNC0EMA5A/A6A/A6B]	0024
	UMA 2.0T-GDI 6AT +IMMO/SMK 17MY (2WD/ULEV) : 39100-2GTC7 [2WD_UMAHNC0ERA5A/A6A/A6B]	0029
	UMA 2.0T-GDI 6AT -IMMO 17MY (4WD/ULEV) : 39100-2GTD2 [4WD_UMAHNC0EMA5A/A6A/A6B]	0025
	UMA 2.0T-GDI 6AT +IMMO/SMK 17MY (4WD/ULEV) : 39100-2GTD7 [4WD_UMAHNC0ERA5A/A6A/A6B]	0030
JF/JFa 2.4	JF/JFA 2.4 GDI 6AT -IMMO 17MY (ULEV) : 39108-2GGC1	0821
	JF/JFA 2.4 GDI 6AT +IMMO/SMK 17MY (ULEV) : 39108-2GGC6	0826
	JF/JFA 2.4 GDI 6AT -IMMO 17MY (ULEV) : 39108-2GGC3	0823
	JF/JFA 2.4 GDI 6AT +IMMO/SMK 17MY (ULEV) : 39108-2GGC8	0828
	JF/JFA 2.4 GDI 6AT -IMMO 17MY (ULEV) : 39108-2GGL1	0824
	JF/JFA 2.4 GDI 6AT +IMMO/SMK 17MY (SULEV) : 39108-2GGD6	0825
	JF/JFA 2.4 GDI 6AT -IMMO 17MY (ULEV) : 39108-2GGL2	0822
	JF/JFA 2.4 GDI 6AT +IMMO/SMK 17MY (SULEV) : 39108-2GGD8	0827
	JF/JFA 2.4 GDI 6AT -IMMO 17MY (SULEV) : 39108-2GGD1	0829
	JF/JFA 2.4 GDI 6AT -IMMO 17MY (SULEV) : 39108-2GGD3	0830
	JF/JFA 2.4 GDI 6AT -IMMO 17MY (SULEV) : 39108-2GGM1	0831
	JF/JFA 2.4 GDI 6AT -IMMO 17MY (SULEV) : 39108-2GGM2	0832
JFa 2.0T	JFA 2.0T-GDI 6AT -IMMO 17MY (ULEV) : 39108-2GTK1	0833
	JFA 2.0T-GDI 6AT +IMMO/SMK 17MY (ULEV) : 39108-2GTK6	0834
QL 2.4	QL 2.4 GDI 6AT -IMMO 17MY (2WD/ULEV) : 39100-2GHS0	0020
	QL 2.4 GDI 6AT +IMMO/SMK 17MY (2WD/ULEV) : 39100-2GHR5	0025
	QL 2.4 GDI 6AT -IMMO 17MY (4WD/ULEV) : 39100-2GHT0	0021
	QL 2.4 GDI 6AT +IMMO/SMK 17MY (4WD/ULEV) : 39100-2GHS5	0026
	QL 2.4 GDI 6AT -IMMO 17MY (2WD/SULEV) : 39100-2GHV0	0022
	QL 2.4 GDI 6AT +IMMO/SMK 17MY (2WD/SULEV) : 39100-2GHT5	0027
	QL 2.4 GDI 6AT -IMMO 17MY (4WD/SULEV) : 39100-2GHW0	0023
	QL 2.4 GDI 6AT +IMMO/SMK 17MY (4WD/SULEV) : 39100-2GHV5	0028
QL 2.0T	QL 2.0T-GDI 6AT -IMMO 17MY (2WD/ULEV) : 39100-2GHJ5	0024
	QL 2.0T-GDI 6AT +IMMO/SMK 17MY (2WD/ULEV) : 39100-2GHJ0	0029
	QL 2.0T-GDI 6AT -IMMO 17MY (4WD/ULEV) : 39100-2GHK5	0030
	QL 2.0T-GDI 6AT +IMMO/SMK 17MY (4WD/ULEV) : 39100-2GHK0	0031

SUBJECT: KNOCK SENSOR DETECTION SYSTEM – ECU LOGIC IMPROVEMENT (PI1802)

Manual Mode ECU Upgrade Passwords (18MY)

Model	Menu	Pass.
UMa 2.4	UMA 2.4 GDI 6AT -IMMO 18MY (2WD/ULEV) : 39100-2GGF3 [2WD_UMAINC4EMA6A/A7A/A7B/D5A/D5B]	0023
	UMA 2.4 GDI 6AT +IMMO/SMK 18MY (2WD/ULEV) : 39100-2GGF8 [2WD_UMAINC4ERA6A/A7A/A7B/D5A/D5B]	0028
	UMA 2.4 GDI 6AT -IMMO 18MY (4WD/ULEV) : 39100-2GGH3 [4WD_UMAINC4EMA6A/A7A/A7B/D5A/D5B]	0024
	UMA 2.4 GDI 6AT +IMMO/SMK 18MY (4WD/ULEV) : 39100-2GGH8 [4WD_UMAINC4ERA6A/A7A/A7B/D5A/D5B]	0029
UMa 2.0T	UMA 2.0 T-GDI 6AT -IMMO 18MY (2WD/ULEV) : 39100-2GTC3 [2WD_UMAINC0EMA6A/A7A/A7B/A7C]	0025
	UMA 2.0 T-GDI 6AT +IMMO/SMK 18MY (2WD/ULEV) : 39100-2GTC8 [2WD_UMAINC0ERA6A/A7A/A7B/A7C]	0030
	UMA 2.0 T-GDI 6AT -IMMO 18MY (4WD/ULEV) : 39100-2GTD3 [4WD_UMAINC0EMA6A/A7A/A7B/A7C]	0031
	UMA 2.0 T-GDI 6AT +IMMO/SMK 18MY (4WD/ULEV) : 39100-2GTD8 [4WD_UMAINC0ERA6A/A7A/A7B/A7C]	0032
JF/JFa 2.4	JF/JFA 2.4 GDI 6AT -IMMO 18MY (ULEV) : 39108-2GGC2	0822
	JF/JFA 2.4 GDI 6AT +IMMO/SMK 18MY (ULEV) : 39108-2GGC7	0827
	JF/JFA 2.4 GDI 6AT -IMMO 18MY (SULEV) : 39108-2GGD2	0823
	JF/JFA 2.4 GDI 6AT +IMMO/SMK 18MY (SULEV) : 39108-2GGD7	0828
JFa 2.0T	JFA 2.0 T-GDI 6AT -IMMO 18MY (ULEV) : 39108-2GTK2	0824
	JFA 2.0 T-GDI 6AT +IMMO/SMK 18MY (ULEV) : 39108-2GTK7	0829
QL 2.4	QL 2.4 GDI 6AT -IMMO 18MY (2WD/ULEV) : 39100-2GHS1	0021
	QL 2.4 GDI 6AT +IMMO/SMK 18MY (2WD/ULEV) : 39100-2GHR6	0026
	QL 2.4 GDI 6AT -IMMO 18MY (4WD/ULEV) : 39100-2GHT1	0022
	QL 2.4 GDI 6AT +IMMO/SMK 18MY (4WD/ULEV) : 39100-2GHS6	0027
	QL 2.4 GDI 6AT -IMMO 18MY (2WD/SULEV) : 39100-2GHV1	0023
	QL 2.4 GDI 6AT +IMMO/SMK 18MY (2WD/SULEV) : 39100-2GHT6	0028
	QL 2.4 GDI 6AT -IMMO 18MY (4WD/SULEV) : 39100-2GHW1	0024
	QL 2.4 GDI 6AT +IMMO/SMK 18MY (4WD/SULEV) : 39100-2GHV6	0029
QL 2.0T	QL 2.0 T-GDI 6AT -IMMO 18MY (2WD/ULEV) : 39100-2GHJ6	0025
	QL 2.0 T-GDI 6AT +IMMO/SMK 18MY (2WD/ULEV) : 39100-2GHJ1	0030
	QL 2.0 T-GDI 6AT -IMMO 18MY (4WD/ULEV) : 39100-2GHK6	0031
	QL 2.0 T-GDI 6AT +IMMO/SMK 18MY (4WD/ULEV) : 39100-2GHK1	0032

1. Within the ECU Upgrade screen displayed, select **Manual Mode**.
2. Select the **ENGINE** system under the System selection menu. Select the applicable **Upgrade Event** listed on page 3 and select **Upgrade** to continue.
3. Select the appropriate control unit part number with reference to the ROM ID Information Table on page 3-6, and select **OK**.
4. Enter the appropriate password from the Manual Mode password table above and select **OK**.
5. The upgrade will begin and the progress of the upgrade will appear on the bar graph.
6. When instructed on the KDS, turn the ignition **OFF** for ten (10) seconds then back on. Touch **OK** to continue.
7. Once the upgrade is complete, touch **OK** to finalize the procedure.
8. When prompted, select **YES** to check for Diagnostic Trouble Codes (DTC) and erase any DTCs stored such as EPS, ESC, and TPMS that may have been set during the upgrade.
9. Start the engine to confirm proper operation of the vehicle.

SUBJECT: KNOCK SENSOR DETECTION SYSTEM – ECU LOGIC IMPROVEMENT (PI1802)

AFFECTED VEHICLE RANGE:

Model	Production Date Range
14MY Optima (TF)	August 29, 2013 through April 25, 2014
15-18MY Optima (TF/QF/JF/JFa)	April 16, 2014 through July 11, 2018
14-18MY Sportage (SL/QL)	September 30, 2013 through April 5, 2018
15-18MY Sorento (XMa/UMa)	January 3, 2014 through March 7, 2018

WARRANTY INFORMATION (PI1802A):

N Code: N99 C Code: C99

Model	Claim Type	Causal P/N	Qty.	Repair Description	Labor Op Code	Op Time	Replacement P/N	Qty.
XMa (15MY)	R	39113 2GBK1	0	(PI1802A) KSDS - ECU Logic Improvement	180A10R0	0.3 M/H	N/A	0
TF (14-15MY)	R	39108 2GBE0	0	(PI1802A) KSDS - ECU Logic Improvement	180107R0	0.3 M/H	N/A	0
QF (15MY)	R	39108 2GBH1	0	(PI1802A) KSDS - ECU Logic Improvement	180A15R0	0.3 M/H	N/A	0
SL (14-15MY)	R	39107 2GCD5	0	(PI1802A) KSDS - ECU Logic Improvement	180108R0	0.3 M/H	N/A	0

WARRANTY INFORMATION (PI1802A1):

N Code: N99 C Code: C99

Model	Claim Type	Causal P/N	Qty.	Repair Description	Labor Op Code	Op Time	Replacement P/N	Qty.
TF (14-15MY)	R	39108 2GBE0	0	(PI1802A1) KSDS - ECU Logic Improvement	180119R0	0.3 M/H	N/A	0
QF (15MY)	R	39108 2GBH1	0	(PI1802A1) KSDS - ECU Logic Improvement	180A17R0	0.3 M/H	N/A	0

SUBJECT: KNOCK SENSOR DETECTION SYSTEM – ECU LOGIC IMPROVEMENT (PI1802)

WARRANTY INFORMATION (PI1802B):

N Code: N99 C Code: C99

Model	Claim Type	Causal P/N	Qty.	Repair Description	Labor Op Code	Op Time	Replacement P/N	Qty.
SL (16MY)	R	39107 2GCD5	0	(PI1802B) KSDS - ECU Logic Improvement	180108R0	0.3 M/H	N/A	0
JF (16MY)	R	39108 2GGC5	0	(PI1802B) KSDS - ECU Logic Improvement	180109R0	0.3 M/H	N/A	0
JFa (16MY)	R	39108 2GTK5	0	(PI1802B) KSDS - ECU Logic Improvement	180A25R0	0.3 M/H	N/A	0
UMa (16MY)	R	39100 2GGF0	0	(PI1802B) KSDS - ECU Logic Improvement	180A26R0	0.3 M/H	N/A	0

WARRANTY INFORMATION (PI1802C):

N Code: N99 C Code: C99

Model	Claim Type	Causal P/N	Qty.	Repair Description	Labor Op Code	Op Time	Replacement P/N	Qty.
QL (17MY)	R	39100 2GHS0	0	(PI1802C) KSDS - ECU Logic Improvement	180110R0	0.3 M/H	N/A	0
JF (17MY)	R	39108 2GGC5	0	(PI1802C) KSDS - ECU Logic Improvement	180109R0	0.3 M/H	N/A	0
JFa (17MY)	R	39108 2GTK5	0	(PI1802C) KSDS - ECU Logic Improvement	180A27R0	0.3 M/H	N/A	0
UMa (17MY)	R	39100 2GGF0	0	(PI1802C) KSDS - ECU Logic Improvement	180A28R0	0.3 M/H	N/A	0

SUBJECT: KNOCK SENSOR DETECTION SYSTEM – ECU LOGIC IMPROVEMENT (PI1802)

WARRANTY INFORMATION (PI1802D):

N Code: N99 C Code: C99

Model	Claim Type	Causal P/N	Qty.	Repair Description	Labor Op Code	Op Time	Replacement P/N	Qty.
QL (18MY)	R	39100 2GHS0	0	(PI1802D) KSDS - ECU Logic Improvement	180110R0	0.3 M/H	N/A	0
JF (18MY)	R	39108 2GGC5	0	(PI1802D) KSDS - ECU Logic Improvement	180109R0	0.3 M/H	N/A	0
JFa (18MY)	R	39108 2GTK5	0	(PI1802D) KSDS - ECU Logic Improvement	180A29R0	0.3 M/H	N/A	0
UMa (18MY)	R	39100 2GGF0	0	(PI1802D) KSDS - ECU Logic Improvement	180A30R0	0.3 M/H	N/A	0

★ NOTICE

VIN inquiry data for this repair is provided for tracking purposes only. Kia retailers should reference PI1802* when accessing the WebDCS system.

PE19-004

KIA

TAB 60_ PI1802_WT

	Warranty Bulletin 2018-11	Issued Date August 29, 2018
	Subject PI1802A "Fast Start" Dealer Incentive	

PI1802A "Fast Start" Dealer Incentive

Effective July 25, 2018, through October 31, 2018

KMA launched Product Improvement Campaign PI1802A on July 25, 2018 to perform a software update on certain vehicles with 2.4L GDI engines to alert vehicle drivers at an early stage of bearing wear to prevent severe engine damage. Additional vehicles were added to the PI1802A population on August 29, 2018.

For customer satisfaction purposes, KMA would like to ensure a maximum number of PI1802A repairs are completed through month-end October, 2018. Therefore, KMA is launching the PI1802A "Fast Start" Dealer Incentive in which Kia Dealers can earn an additional $25 for each PI1802A campaign repair completed by October 31, 2018.

General Program Details *(detailed program rules to be published separately via update to this Warranty Bulletin)*:

- **Kia Dealers can earn an additional $25 for each PI1802A campaign repair completed by October 31, 2018 (repair orders open and closed by October 31, 2018)**
- PI1802A warranty claims must be received and approved by KMA by no later than **November 30, 2018**
- For Kia dealers to be eligible for the PI1802A "Fast Start" Dealer Incentive, PI1802A repairs must be completed on **at least 25% of VINs assigned to the dealership** during the program period in WebDCS (Campaigns>Open Campaign Report), regardless of which dealer completed the repair
- **VINs are assigned to dealers in WebDCS** (Campaigns>Open Campaign Report) based upon last servicing dealer by warranty claim, or if there are no warranty claims, based upon the original selling dealer (no reassignments, removals or other adjustments will be made)
- Dealers must be active on the final day of the program (October 31, 2018) to be eligible for incentive payout which shall be paid via credit posted to either the mid-month or month-end Kia Dealer Statement by **December 31, 2018**

Dealers are encouraged to reward their employees who contribute significantly to the earning of this incentive (especially Service Managers, Service Consultants, and Technicians).

All KMA Warranty Policies and Procedures apply. Please refer to Section 7 of the Kia Service Policies and Procedures Manual posted on Kdealer.com for details. KMA reserves the right to audit all Dealer records supporting any warranty repairs completed, and to disqualify participants in the event of any irregularity.

PE19-004

KIA

TAB 61_ PI1802A1_ S

Product Improvement Campaign (PI1802) - Update

September 20, 2018

Attention: All Kia Dealer Service Managers

As announced in July 2018, Kia Motors America, Inc. has been conducting a Product Improvement Campaign (PI1802) to perform a software update to protect the engine from excessive connecting rod bearing damage by utilizing a Knock Sensor Detection System ("KSDS") on certain Kia vehicles.

Since the launch of this Product Improvement Campaign, Kia has become aware that the KSDS software version installed on 2014~2015 MY Optima vehicles **before** September 7, 2018 has an error and requires the installation of a new corrected software.

Kia has identified all affected 2014~2015 MY Optima vehicles which require the installation of the new corrected software. These vehicles are identified under a separate campaign number, PI1802A1. The customers of these vehicles have been notified by mail to return to the dealership to have this software update with the corrected version installed as quickly as possible.

Please refer to TSB PI1802 (Rev 2, dated September 20, 2018) for the Previous & New ROM IDs of software versions for the affected vehicles.

In the week of September 24, 2018, a copy of the owner notification letter will be made available on kdealer.com, and a list of retail Kia Optima vehicle owners affected by this campaign can be accessed on WEBDCS.

We appreciate your support in encouraging customers to have this Product Improvement Campaign completed as quickly as possible.

Please make certain the appropriate personnel in your dealership are familiar with the updated details of this campaign to ensure proper responses to customer inquiries and requests to have the campaign performed on their vehicles. Be sure to remind your customers of the importance of following the vehicle's maintenance schedule and keeping maintenance records.

LEGAL PRIVACY LIABILITY NOTICE: Pursuant to the terms of the Dealer Sales and Service Agreement and the Gramm-Leach-Bliley federal consumer privacy act, you are required to keep confidential any and all information and documents provided to you by Kia Motors America, Inc. or generated by you in the conduct of carrying out work under that Agreement regarding Kia vehicle purchasers and owners, including but not limited to warranty claim information. Kia dealers may use such owner information for the sole purpose of conducting and performing this product improvement campaign, and for no other purpose.

Your prompt attention in completing this campaign is appreciated. If you have any questions, please contact your Kia District Parts & Service Manager.

Sincerely,



Neem Van der Reest
Quality Analysis Manager
Enclosures

PE19-004

KIA

TAB 62_ PI1802WX_TSB

	GROUP	MODEL
KIA	**Product Improvement**	**2015MY Sorento (XMa) Optima (QF) 2014-2015MY Optima (TF) Sportage (SL)**
	NUMBER	DATE
	PI1802W/X	**October 2018**

PRODUCT IMPROVEMENT CAMPAIGN

SUBJECT: ENGINE REPLACEMENT INSTRUCTIONS FOR DTC P1326 (PI1802W/X)

This bulletin provides information related to the Technical Service Bulletin previously published in July 2018 (PI1802, Rev 2, 09/24/2018) titled "Knock Sensor Detection System - ECU Logic Improvement". Specifically, this bulletin provides instructions on which procedures to follow if, after installation of the KSDS, any one of the subject vehicles below returns to the dealer with Diagnostic Trouble Code ("DTC"), P1326.

- Some 2014MY Optima (TF) vehicles equipped with 2.4L GDI engines, manufactured at KMC from August 29, 2013 through April 25, 2014;
- All 2015MY Optima (TF/QF) vehicles equipped with 2.4L GDI and 2.0L Turbocharged GDI (T-GDI) engines;
- All 2014-2015MY Sportage (SL) vehicles equipped with 2.4L GDI and 2.0L Turbocharged GDI (T-GDI) engines;
- All 2015MY Sorento (XMa) vehicles equipped with 2.4L GDI engines, manufactured from January 3, 2014 through December 11, 2014.

If DTC P1326 is present, first check for any wiring signal interference following the procedure set forth below before determining whether an engine replacement is necessary. Based on the results of the Wiring Signal Interference Check, dealers are to perform either the Knock Sensor Wiring Repair or the Engine Long-Block Replacement according to the procedures in this TSB.

If the vehicle's engine is already seized or severely knocking, dealers are to perform the Engine Long-Block Replacement **and** the Wiring Signal Interference Check according to the procedures in this TSB.

Before conducting the procedure, verify the vehicle is included in the list of affected VINs.

★ NOTICE

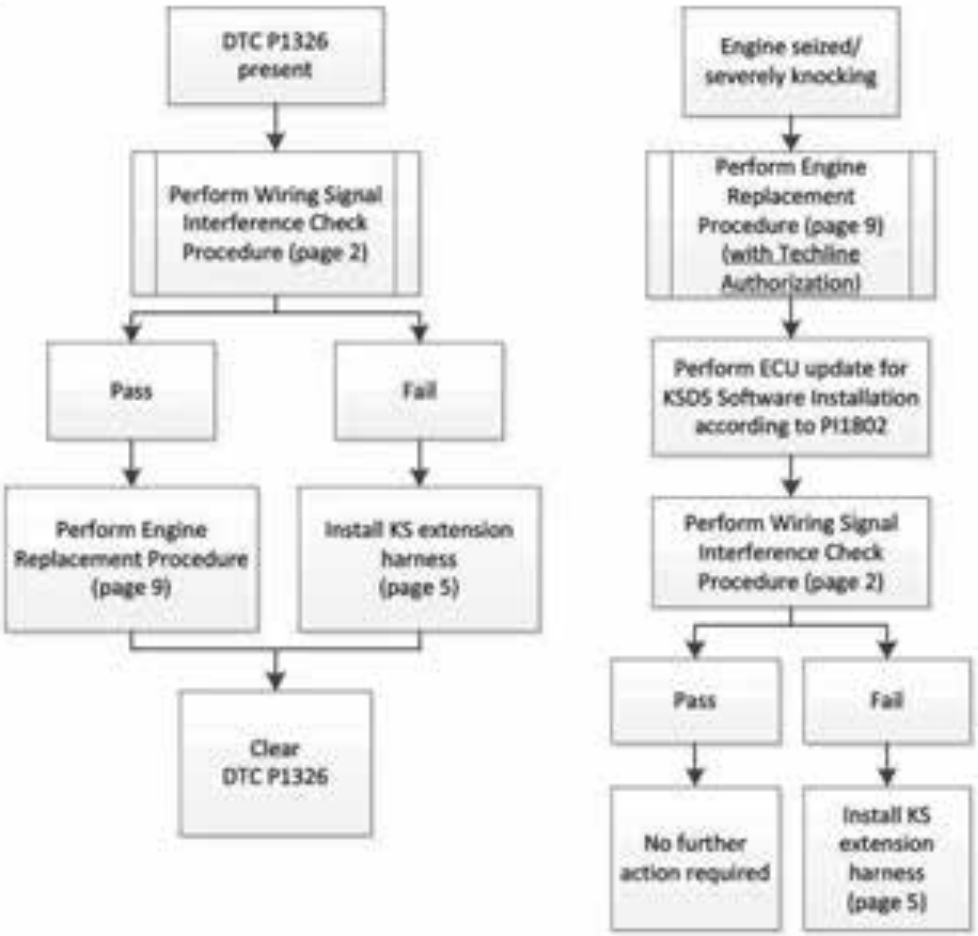
To ensure complete customer satisfaction, always remember to refer to WebDCS Warranty Coverage (validation) Inquiry Screen (Service → Warranty Coverage → Warranty Coverage Inquiry) for a list of any additional campaigns that may need to be performed on the vehicle before returning it to the customer.

File Under: <Product Improvement>

Circulate To: ☒ General Manager ☒ Service Manager ☒ Parts Manager ☒ Service Advisors ☒ Technicians ☒ Body Shop Manager ☐ Fleet Repair

SUBJECT: ENGINE REPLACEMENT INSTRUCTIONS FOR DTC P1326 (PI1802W/X)

Flow Chart:



Wiring Signal Interference Check Procedure:

1. Using the KDS, perform a Fault Code Search and confirm DTC P1326 is present.
   - If P1326 is present, proceed to the next step to perform the wiring signal interference check.
   - If the engine is seized or severely knocking, proceed to the engine replacement procedure on page 9.



2. Start/warm up the engine and ensure **ENGINE OIL** is at operating temperature (176°F).



3. From the KDS Home Screen, select S/W Management.



4. Select Engine Control → Wiring Signal Interference Check.



5. Ensure the engine is on and at idle and **ENGINE OIL** temperature is at 176°F degrees or higher. Select OK to proceed.



5b. Select OK to proceed.

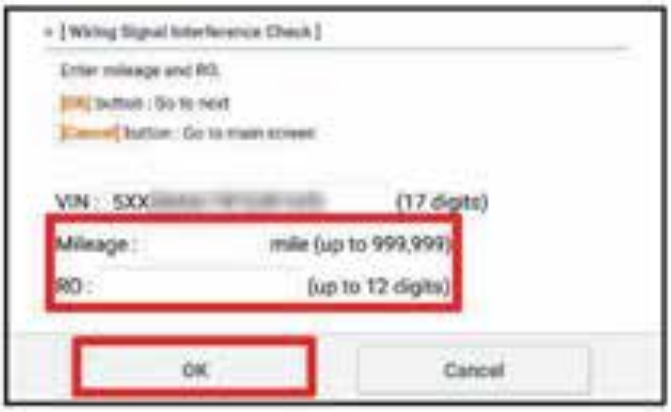
NOTE: This test should only be performed if Knock Sensor Detection System - ECU Logic Improvement (PI1802) has previously been completed.



5c. If the conditions are not met, a pop-up as shown will be displayed.



6. Enter vehicle mileage and RO number (VIN is automatically populated).



7. Wiring Signal Interference Check test will begin and take about three (3) minutes to complete. **NOTE**: Do not push on the accelerator pedal.



- If the result is "OK", turn the engine off and proceed to the Engine Replacement procedure on page 9.



- If the result is "NOT OK", turn the engine off and proceed to **step 2** of the Knock Sensor (KS) Extension Harness Installation procedure on page 5.



KS Extension Harness Installation Procedure:

NOTE: Photos below are from a 15MY Optima (QF). Components and their location may vary in different models.

1. Inspect the ECU harness (A) and verify if the Knock Sensor wiring extension harness (B) has previously been installed.

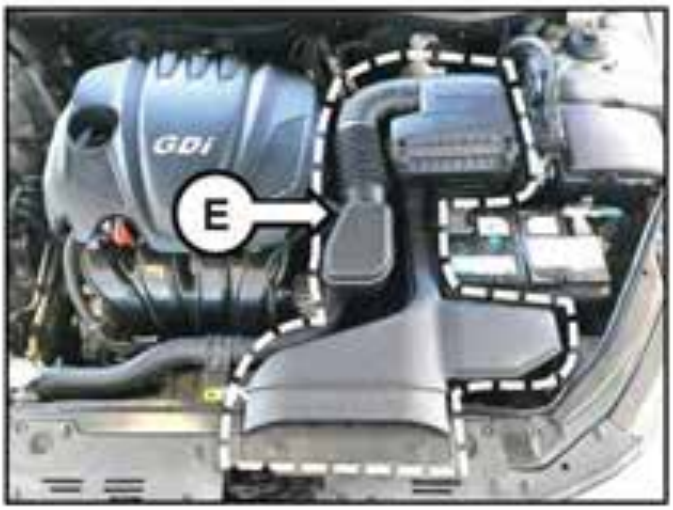
   NOTE: To identify the extension harness (B), look for an external harness (B) which should be cable-tied to the existing wiring harness (A) leading by the intake manifold (C) to the knock sensor (D), as shown.

   - If the extension harness (B) has been installed, no further action is required.
   - If the extension harness (B) has not been installed, proceed to the next step.

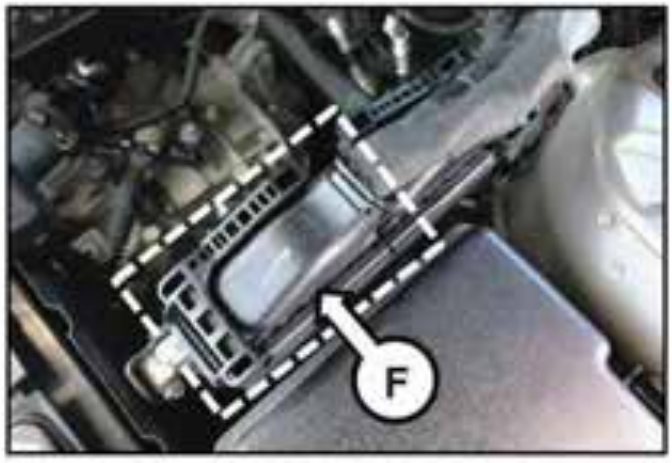




2. Remove the air cleaner and duct assembly (E).



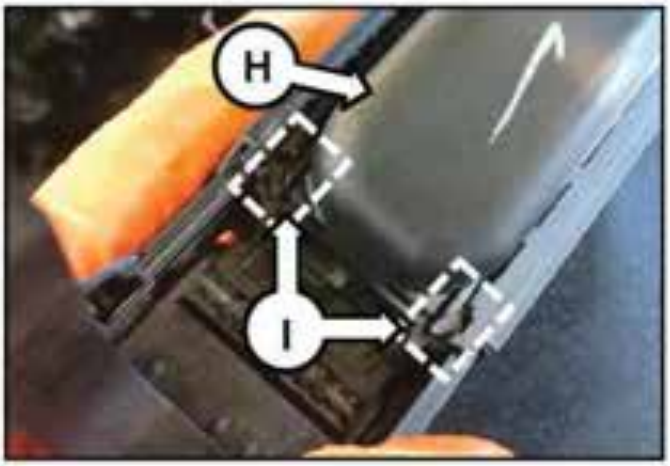
3. Disconnect the ECU connector (F).



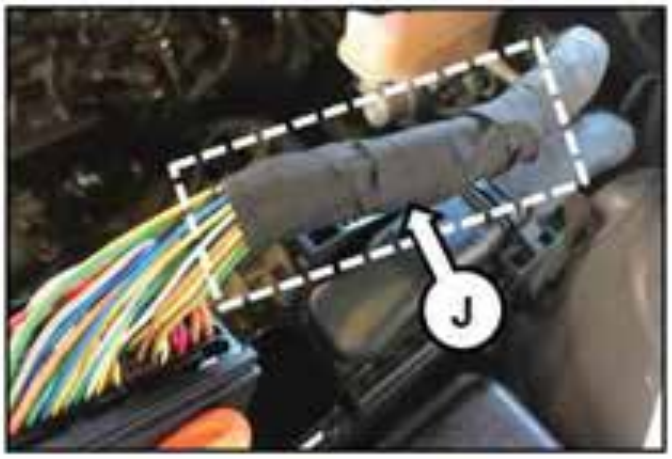
4. Cut the existing cable-tie (G) from the connector.



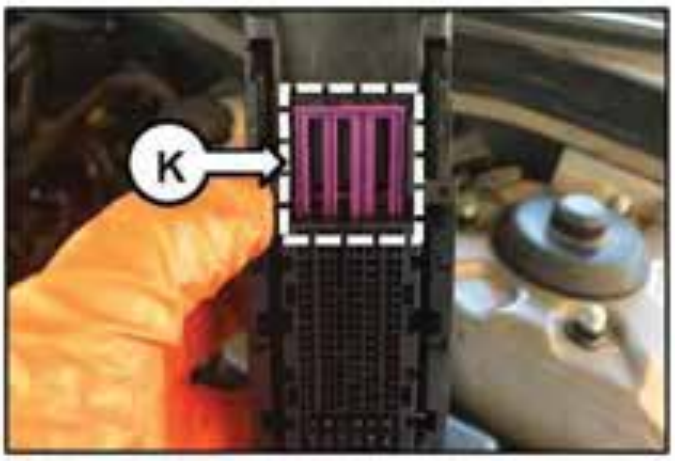
5. Remove the ECU connector cover (H) by carefully unclipping the two (2) tabs (I) and sliding the cover (H) towards the tabs (I).



6. Carefully remove the electrical tape (J) to expose the harness wires.



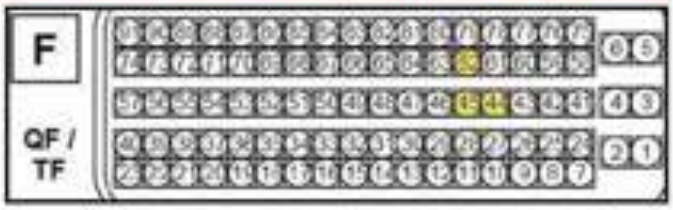
7. Remove the pin retainer (K).



8. Locate the three (3) knock sensor circuit terminals from the ECU connector (F). Refer to the "Schematic Diagrams → Engine Electrical System → Engine Control System → Schematic Diagrams" chapter of the applicable ETM on KGIS.

   44. Knock Sensor Shielded Ground
   45. Knock Sensor Ground
   62. Knock Sensor Interface (Signal)

   Click here to see a video of terminal removal.





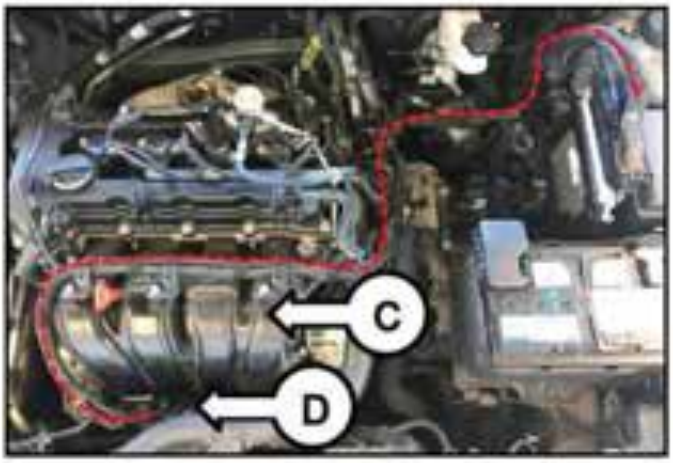
9. Remove the three (3) terminals **one at a time** and insert the new terminals of the extension harness into the ECU connector (F). Reinstall pin retainer (K) and reassemble the connector (F).



*** IMPORTANT**

Be sure to note the rotational position of the terminals during removal. They are directional and need to be reinstalled in the same "clock" position.

10. Route the extension harness (B) along the existing harness (A) leading by the intake manifold (C) to the knock sensor (D), as shown.



*** IMPORTANT**

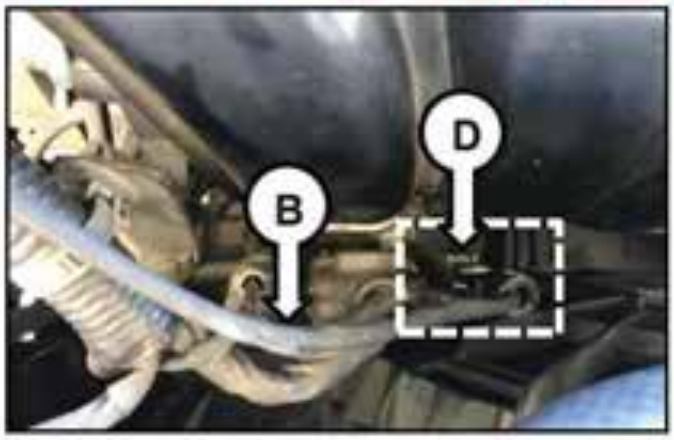
The harness (B) must be routed above and secured to the harness protector (L1) and UNDER the Breather Hose (L2) and Camshaft Position Sensor (L3).





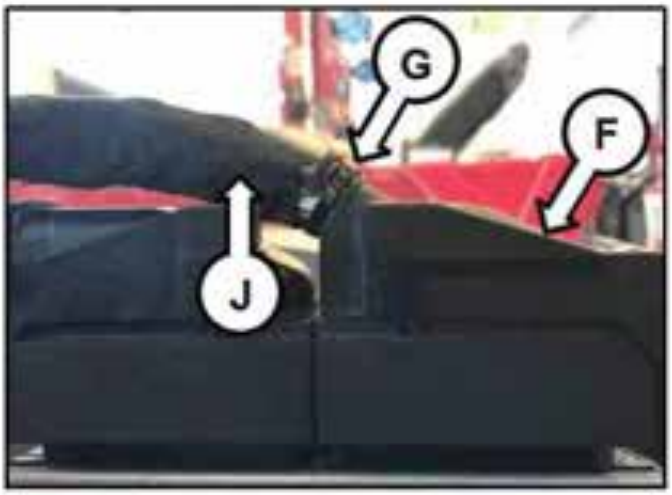


11. Connect the extension harness (B) to the knock sensor (D).

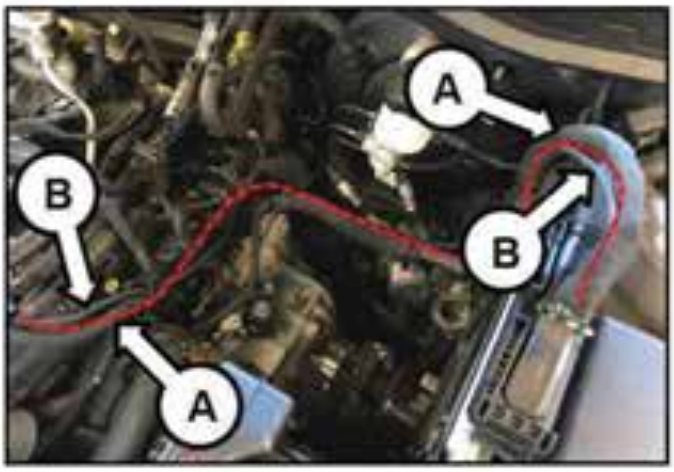


12. Cut off and discard the three (3) old knock sensor circuit terminals and the old knock sensor connector and secure the remaining wires to the new extension harness using the supplied electrical tape. **NOTE**: Complete removal of the old knock sensor wires is not necessary. Only remove the old terminals and connector.

13. Secure the extension harness at the connector (F) by replacing the cable-tie (G) removed in step 4 with a new supplied cable-tie and the electrical tape (J) removed in step 6 with new supplied electrical tape.



14. Secure the extension harness (B) to the existing harness (A) using the supplied cable-ties. Tuck and secure any excess wiring of the extension harness near the ECU with cable-tie.



15. Reinstall all removed components in the reverse order of removal.

16. Erase the P1326 DTC with the KDS and start the engine to confirm proper operation.

Engine Replacement Procedure:

1. Remove the engine assembly by referring to the "Engine And Transmission (Transaxle) Assembly → Engine And Transmission (Transaxle) Assembly → Repair procedures" chapter in the applicable Shop Manual on KGIS.

   Refer to TSB ENG190 for information regarding engine replacement practices.



2. After removal of the engine from the vehicle, remove all components that will need to be transferred by referring to the applicable Shop Manual on KGIS.

3. Place the new engine block on an engine stand.

4. Install all removed components from the old engine block onto the new engine block utilizing all parts from Service Kit I and II. Be advised of notes below.

Notes:

High Pressure Pump & Roller Tappet:

- Refer to TSB ENG083 for special attention and handling procedures of GDI-specific components.
- When installing the high pressure pump and roller tappet onto the new engine, apply engine oil to the roller tappet, and O-rings of the high pressure pump.

Tightening torques of pump bolts:
9.4 – 10.9 lb.ft (12.8 – 14.7 N.m, 1.3 – 1.5 kgf.m)

Tightening torques of pipe flare nut:
19.5 – 23.9 lb.ft (26.5 – 32.4 N.m, 2.7 – 3.3 kgf.m)

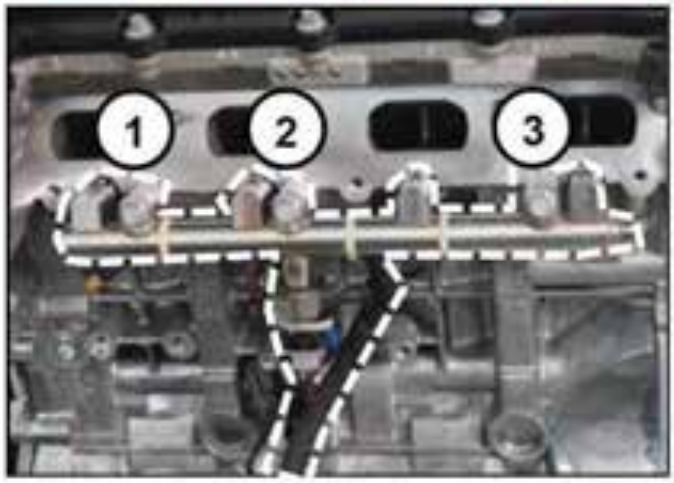


*** NOTICE**

Refer to TSB ENG083 for gasoline direct injection (GDI) specific information, including related warnings and cautions for handling high fuel pressure system components.

Delivery Pipe:

- Refer to TSB ENG083 for special attention and handling procedures of GDI-specific components.
- Prior to installing the delivery pipe, be sure to replace all of the injector O-rings and injector retainers.
- Prior to installing the delivery pipe, apply engine oil to the injector O-rings.
- When installing the delivery pipe, use caution not to damage the tip of the injector.
- Be sure to replace the delivery pipe retaining bolts and torque them in the sequence shown.



Tightening torque of bolts:
13.7 – 17.4 lb.ft (18.6 – 23.5 N.m, 1.9 – 2.4 kgf.m)

*** NOTICE**

Combustion seals must be compressed after installation and before attempting to install into the cylinder head. Use SST 09353 2B000 (refer to TSB ENG083).

Dipstick Tube & Dipstick:

- Prior to installing the new tube, lubricate the o-ring located at the bottom of the tube with engine oil.
- Install the red dipstick included in Service Kit I.

Tightening torque of bolt:
5.8 – 8.7 lb.ft (7.8 – 11.8 N.m, 0.8 - 1.2 kgf.m)



Intake Manifold:

- Prior to installation, replace the intake manifold gaskets.
- Torque bolts in the sequence shown.

Tightening torque of bolts:
13.7 – 17.4 lb.ft (18.6 – 23.5 N.m, 1.9 – 2.4 kgf.m)

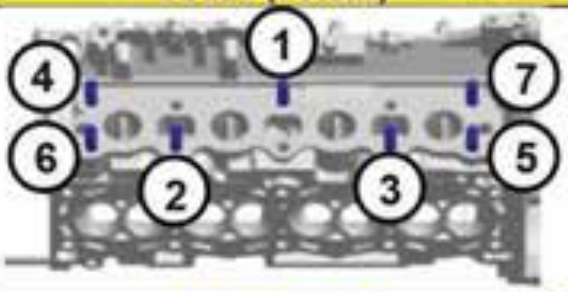


Exhaust Manifold:

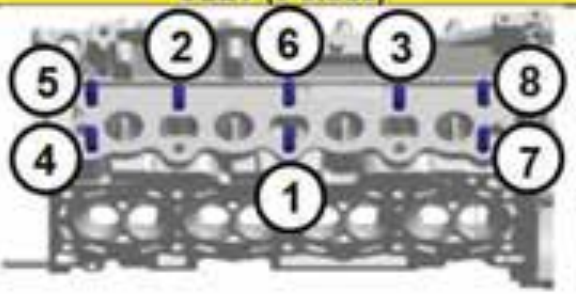
- All engines supplied under this Product Improvement Campaign have the exhaust manifold studs configured for SULEV engines.
- Using the pictures to the right, check the exhaust manifold stud location and quantity. Relocate as required for ULEV engines and obtain one (1) extra from the removed engine.
- Prior to installation, replace the exhaust manifold gasket and front muffler gasket.
- Torque nuts in the sequence shown.

Tightening torque of nuts:
36.2 – 39.7 lb.ft (49.0 – 53.9 N.m, 5.0 – 5.5 kgf.m)

SULEV (7 studs)



ULEV (8 studs)

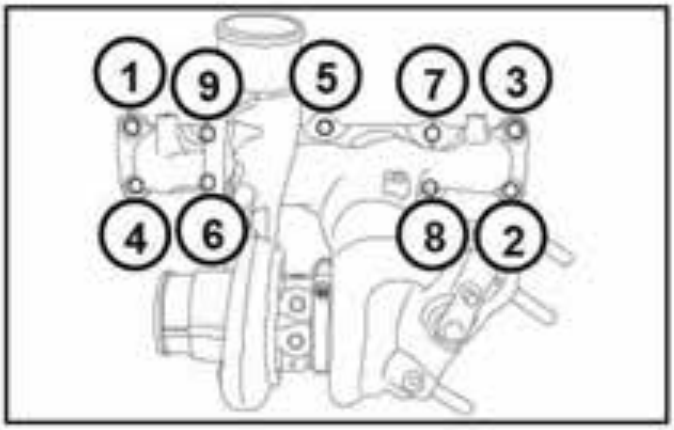


***For 15MY Sorento (XMa) vehicles only: check the underhood emissions label and record whether the label references ULEV or SULEV. This information is needed to select/order the correct replacement engine.**



- On Turbo engines, replace the turbocharger oil feed line and gaskets.

Tightening torque of oil feed line bolt:
8.7 – 13.0 lb.ft (11.8 – 17.7 N.m, 1.2 – 1.8 kgf.m)
Tightening torque of oil feed line nuts:
5.8 – 8.7 lb.ft (7.8 – 11.8 N.m, 0.8 – 1.2 kgf.m)
Tightening torque of oil drain line nuts and bolts:
5.8 – 8.7 lb.ft (7.8 – 11.8 N.m, 0.8 – 1.2 kgf.m)



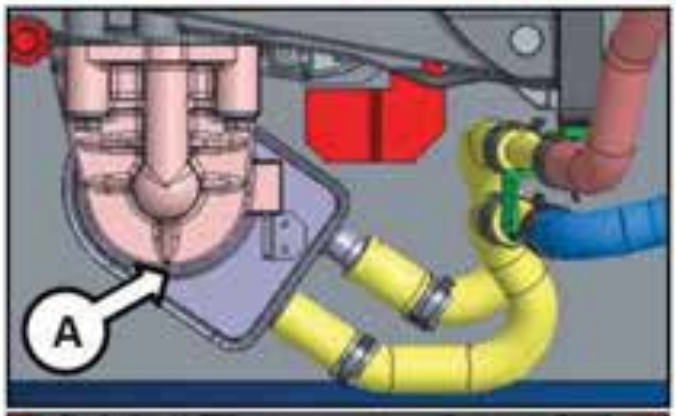
- Torque exhaust manifold nuts in the sequence shown.

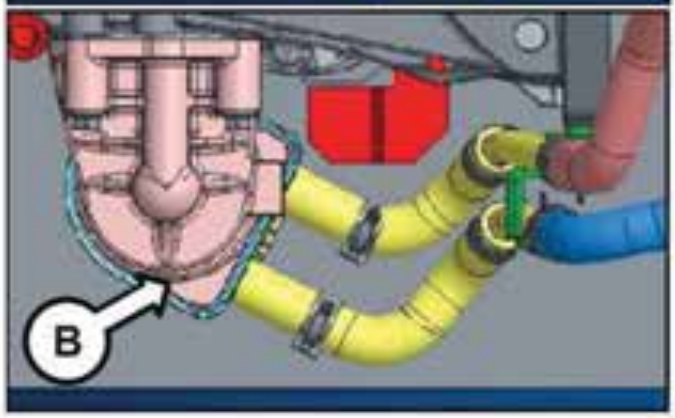
Tightening torque of nuts:
36.2 – 39.7 lb.ft (49.0 – 53.9 N.m, 5.0 – 5.5 kgf.m)

Oil Cooler Tube Assembly:

New engines may be supplied with a different oil cooler. Use steps below to determine the need for a replacement oil cooler tube assembly.

- If the new engine's (bigger) oil cooler (A) does not match the old engine's (smaller) oil cooler (B), replace the oil cooler tube assembly with the improved part. See parts table on page 15.
- If the new engine's (bigger) oil cooler (A) matches the old engine's (bigger) oil cooler (A), reuse the old engine's oil cooler tube assembly.
- If the new engine's (smaller) oil cooler (B) matches the old engine's (smaller) oil cooler (B), reuse the old engine's oil cooler tube assembly.





Drive Plate Bolts:

- Replace all seven (7) drive plate (AT) bolts.

Tightening torque of nuts:
86.8 – 93.9 lb.ft (117.7 – 125.5 N.m, 12.0 – 13.0 kgf.m)



Drive Plate Bolt (A/T)

Torque Converter

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



Not Fully Inserted



Fully Inserted

5. Reinstall the assembled engine and transmission/transaxle into the vehicle.

   Be sure to:

   - Fill crankcase with 5W-30 oil (~5.8 quarts).
   - Fill and bleed the cooling system with 50/50 coolant or mixture appropriate for area.
   - Pressurize the fuel system before starting the vehicle.
   - Reset engine adaptive values and perform steering angle sensor calibration.

   Refer to TSB ENG190 for information regarding engine replacement practices.

6. Verify proper operation of the vehicle with road test, and **erase any stored DTCs** (e.g., EPS, ESC, and TPMS) that may have been set by this procedure. Verify no leaks exist and ensure engine oil and coolant are at their proper level.

   If any DTCs are still active, follow any related diagnosis and repair as needed.

SUBJECT: ENGINE REPLACEMENT INSTRUCTIONS FOR DTC P1326 (PI1802W/X)

AFFECTED VEHICLE RANGE:

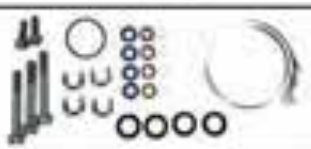
Model	Production Date Range
15MY Sorento (XMa) (2.4)	January 3, 2014 through December 11, 2014
14MY Optima (TF) (2.4)	August 29, 2013 through April 25, 2014
14-15MY Sportage (SL) (2.4 & 2.0T)	September 30, 2013 through April 8, 2015
15MY Optima (QF/TF) (2.4 & 2.0T)	April 16, 2014 through October 2, 2015

REQUIRED TOOL:

Tool Name	Tool Part No.	Figure	Comments
Torque Wrench Socket	09314 3Q100		Refer to TSB ENG083 for detailed usage instructions
Injector Combustion Seal Ring Installer	09353 2B000		
Pin Tool	91400 00000QQK		Auto-shipped to Dealers

REQUIRED PARTS:

Part Name	MY	Model	Part Number		Figure
			2.4GDI	2.0T-GDI	
Engine Long Block	2014-2015	TF	21101 2GK06QQKR	-	
		SL	21101 2GK36QQKR	21101 2GK37QQKR	
	2015	QF	21101 2GK06QQKR	21101 2GK08QQKR	
		XMa ULEV & SULEV	21101 2GK11QQKR	-	

Part Name	Engine	Part Number	Figure
Service Kit I	2.4GDI	21111 2GK50QQK	
	2.0T-GDI	21111 2GK60QQK	
Service Kit II	2.4GDI and 2.0T-GDI	21111 2GK70QQK	

SUBJECT: ENGINE REPLACEMENT INSTRUCTIONS FOR DTC P1326 (PI1802W/X)

Part Name	Engine	Part Number	Figure
Drive Plate Bolts	2.4GDI and 2.0T-GDI	23311 25050	
Oil Cooler Tube Assembly (replacement is conditional, refer to page 12)	2.4GDI	25470 2G050QQK	
	2.0T-GDI	25470 2G650QQK	
KS Extension Harness	2.4GDI and 2.0T-GDI	91400 2T000QQK	

WARRANTY INFORMATION (PI1802**W1**, MIL ON WITH P1326):
N Code: N99 C Code: C99

Model	Claim Type	Causal P/N	Qty.	Repair Description	Labor Op Code	Op Time	Replacement P/N	Qty.
Sor. (XMa)	R	21020 2G010	0	(PI1802**W1**) 2.4L GDI 2WD MIL ON with P1326, KSDS Wire Harness Inspection Pass, & Engine Replacement	180A12R0	8.4 M/H	21111 2GK50QQK	1
							21111 2GK70QQK	1
							23311 25050	7
							(ULEV or SULEV) 21101 2GK11QQKR	1
				(PI1802**W1**) 2.4L GDI 2WD MIL ON with P1326, KSDS Wire Harness Inspection Fail, KSDS Extension Harness Install	180A12R2	0.8 M/H	91400 2T000QQK	1
				(PI1802**W1**) 2.4L GDI AWD MIL ON with P1326, KSDS Wire Harness Inspection Pass, & Engine Replacement	180A12R1	8.6 M/H	21111 2GK50QQK	1
							21111 2GK70QQK	1
							23311 25050	7
							(ULEV or SULEV) 21101 2GK11QQKR	1
				(PI1802**W1**) 2.4L GDI AWD MIL ON with P1326, KSDS Wire Harness Inspection Fail, KSDS Extension Harness Install	180A12R3	0.8 M/H	91400 2T000QQK	1

SUBJECT: ENGINE REPLACEMENT INSTRUCTIONS FOR DTC P1326 (PI1802W/X)

Model	Claim Type	Causal P/N	Qty.	Repair Description	Labor Op Code	Op Time	Replacement P/N	Qty.
Opt. (QF)	R	23060 2G400	0	(PI1802W1) 2.4L GDI MIL ON with P1326, KSDS Wire Harness Inspection Pass, & Engine Replacement	180A16R1	8.4 M/H	21111 2GK50QQK	1
							21111 2GK70QQK	1
							23311 25050	7
							21101 2GK06QQKR	1
				(PI1802W1) 2.4L GDI MIL ON with P1326, KSDS Wire Harness Inspection Fail, KSDS Extension Harness Install	180A16R3	0.8 M/H	91400 2T000QQK	1
				(PI1802W1) 2.0L T-GDI MIL ON with P1326, KSDS Wire Harness Inspection Pass, & Engine Replacement	180A16R0	8.6 M/H	21111 2GK60QQK	1
							21111 2GK70QQK	1
							23311 25050	7
							21101 2GK06QQKR	1
				(PI1802W1) 2.0L T-GDI MIL ON with P1326, KSDS Wire Harness Inspection Fail, KSDS Extension Harness Install	180A16R2	0.8 M/H	91400 2T000QQK	1
Opt. (TF)	R	23060 2G400	0	(PI1802W1) 2.4L GDI MIL ON with P1326, KSDS Wire Harness Inspection Pass, & Engine Replacement	180111R0	8.4 M/H	21111 2GK50QQK	1
							21111 2GK70QQK	1
							23311 25050	7
							21101 2GK06QQKR	1
				(PI1802W1) 2.4L GDI MIL ON with P1326, KSDS Wire Harness Inspection Fail, KSDS Extension Harness Install	180111R5	0.8 M/H	91400 2T000QQK	1

SUBJECT: ENGINE REPLACEMENT INSTRUCTIONS FOR DTC P1326 (PI1802W/X)

Model	Claim Type	Causal P/N	Qty.	Repair Description	Labor Op Code	Op Time	Replacement P/N	Qty.
Spo. (SL)	R	23060 2G400	0	(PI1802W1) 2.4L GDI 2WD MIL ON with P1326, KSDS Wire Harness Inspection Pass, & Engine Replacement	180112R0	7.7 M/H	21111 2GK50QQK	1
							21111 2GK70QQK	1
							23311 25050	7
							21101 2GK36QQKR	1
				(PI1802W1) 2.4L GDI 2WD MIL ON with P1326, KSDS Wire Harness Inspection Fail, KSDS Extension Harness Install	180112R5	0.9 M/H	91400 2T000QQK	1
				(PI1802W1) 2.4L GDI AWD MIL ON with P1326, KSDS Wire Harness Inspection Pass, & Engine Replacement	180112R2	8.1 M/H	21111 2GK50QQK	1
							21111 2GK70QQK	1
							23311 25050	7
							21101 2GK36QQKR	1
				(PI1802W1) 2.4L GDI AWD MIL ON with P1326, KSDS Wire Harness Inspection Fail, KSDS Extension Harness Install	180112R7	0.9 M/H	91400 2T000QQK	1
				(PI1802W1) 2.0L T-GDI 2WD MIL ON with P1326, KSDS Wire Harness Inspection Pass, & Engine Replacement	180112R3	7.7 M/H	21111 2GK60QQK	1
							21111 2GK70QQK	1
							23311 25050	7
							21101 2GK37QQKR	1
				(PI1802W1) 2.0L T-GDI 2WD MIL ON with P1326, KSDS Wire Harness Inspection Fail, KSDS Extension Harness Install	180112R8	0.9 M/H	91400 2T000QQK	1
				(PI1802W1) 2.0L T-GDI AWD MIL ON with P1326, KSDS Wire Harness Inspection Pass, & Engine Replacement	180112R4	8.1 M/H	21111 2GK60QQK	1
							21111 2GK70QQK	1
							23311 25050	7
							21101 2GK37QQKR	1
				(PI1802W1) 2.0L T-GDI AWD MIL ON with P1326, KSDS Wire Harness Inspection Fail, KSDS Extension Harness Install	180112R9	0.9 M/H	91400 2T000QQK	1

SUBJECT: ENGINE REPLACEMENT INSTRUCTIONS FOR DTC P1326 (PI1802W/X)

WARRANTY INFORMATION (PI1802X1, ENGINE SEIZED/SEVERE KNOCKING):

N Code: N99 C Code: C99

Model	Claim Type	Causal P/N	Qty.	Repair Description	Labor Op Code	Op Time	Replacement P/N	Qty.
Sor. (XMa)	R	21020 2G010	0	(PI1802X1) 2.4L GDI 2WD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Pass	180A12R8	8.4 M/H	21111 2GK50QQK	1
							21111 2GK70QQK	1
							23311 25050	7
							(ULEV or SULEV) 21101 2GK11QQKR	1
				(PI1802X1) 2.4L GDI AWD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Pass	180A12R9	8.6 M/H	21111 2GK50QQK	1
							21111 2GK70QQK	1
							23311 25050	7
							(ULEV or SULEV) 21101 2GK11QQKR	1
				(PI1802X1) 2.4L GDI 2WD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Fail, KSDS Wire Harness Install	180A12RA	8.9 M/H	21111 2GK50QQK	1
							21111 2GK70QQK	1
							23311 25050	7
							(ULEV or SULEV) 21101 2GK11QQKR	1
							91400 2T000QQK	1
				(PI1802X1) 2.4L GDI AWD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Fail, KSDS Wire Harness Install	180A12RB	9.1 M/H	21111 2GK50QQK	1
							21111 2GK70QQK	1
							23311 25050	7
							(ULEV or SULEV) 21101 2GK11QQKR	1
							91400 2T000QQK	1

SUBJECT: ENGINE REPLACEMENT INSTRUCTIONS FOR DTC P1326 (PI1802W/X)

Model	Claim Type	Causal P/N	Qty.	Repair Description	Labor Op Code	Op Time	Replacement P/N	Qty.
Opt. (QF)	R	23060 2G400	0	(PI1802X1) 2.4L GDI Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Pass	180A16R9	8.4 M/H	21111 2GK50QGK	1
							21111 2GK70QGK	1
							23311 25050	7
							21101 2GK06QGKR	1
				(PI1802X1) 2.0L T-GDI Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Pass	180A16R8	8.7 M/H	21111 2GK60QGK	1
							21111 2GK70QGK	1
							23311 25050	7
							21101 2GK06QGKR	1
				(PI1802X1) 2.4L GDI Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Fail, KSDS Wire Harness Install	180A16RB	8.9 M/H	21111 2GK50QGK	1
							21111 2GK70QGK	1
							23311 25050	7
							21101 2GK06QGKR	1
							91400 2T000QGK	1
				(PI1802X1) 2.0L T-GDI Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Fail, KSDS Wire Harness Install	180A16RA	9.2 M/H	21111 2GK60QGK	1
							21111 2GK70QGK	1
							23311 25050	7
							21101 2GK06QGKR	1
							91400 2T000QGK	1
Opt. (TF)	R	23060 2G400	0	(PI1802X1) 2.4L GDI Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Pass	18D111RA	8.4 M/H	21111 2GK50QGK	1
							21111 2GK70QGK	1
							23311 25050	7
							21101 2GK06QGKR	1
				(PI1802X1) 2.4L GDI Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Fail, KSDS Wire Harness Install	18D111RF	8.9 M/H	21111 2GK50QGK	1
							21111 2GK70QGK	1
							23311 25050	7
							21101 2GK06QGKR	1
							91400 2T000QGK	1

SUBJECT: ENGINE REPLACEMENT INSTRUCTIONS FOR DTC P1326 (PI1802W/X)

Model	Claim Type	Causal P/N	Qty.	Repair Description	Labor Op Code	Op Time	Replacement P/N	Qty.
Spo. (SL)	R	23060 2G400	0	(PI1802X1) 2.4L GDI 2WD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Pass	180112RA	7.7 M/H	21111 2GK50QGK	1
							21111 2GK70QGK	1
							23311 25050	7
							21101 2GK36QGKR	1
				(PI1802X1) 2.4L GDI AWD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Pass	180112RC	8.1 M/H	21111 2GK50QGK	1
							21111 2GK70QGK	1
							23311 25050	7
							21101 2GK36QGKR	1
				(PI1802X1) 2.0L T-GDI 2WD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Pass	180112RD	7.7 M/H	21111 2GK60QGK	1
							21111 2GK70QGK	1
							23311 25050	7
							21101 2GK37QGKR	1
				(PI1802X1) 2.0L T-GDI AWD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Pass	180112RE	8.1 M/H	21111 2GK60QGK	1
							21111 2GK70QGK	1
							23311 25050	7
							21101 2GK37QGKR	1
				(PI1802X1) 2.4L GDI 2WD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Fail, KSDS Wire Harness Install	180112RF	8.3 M/H	21111 2GK50QGK	1
							21111 2GK70QGK	1
							23311 25050	7
							21101 2GK36QGKR	1
							91400 2T000QGK	1
				(PI1802X1) 2.4L GDI AWD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Fail, KSDS Wire Harness Install	180112RH	8.7 M/H	21111 2GK50QGK	1
							21111 2GK70QGK	1
							23311 25050	7
							21101 2GK36QGKR	1
							91400 2T000QGK	1
				(PI1802X1) 2.0L T-GDI 2WD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Fail, KSDS Wire Harness Install	180112RI	8.3 M/H	21111 2GK60QGK	1
							21111 2GK70QGK	1
							23311 25050	7
							21101 2GK37QGKR	1
							91400 2T000QGK	1
				(PI1802X1) 2.0L T-GDI AWD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Fail, KSDS Wire Harness Install	180112RJ	8.7 M/H	21111 2GK60QGK	1
							21111 2GK70QGK	1
							23311 25050	7
							21101 2GK37QGKR	1
							91400 2T000QGK	1

NOTE: Refer to Warranty Bulletin 2018-10 for details regarding coolant and substitute transportation reimbursement requirements.

Use sublet code 'X3' with a maximum allowed amount of $19.80 for "ENGINE R&R" engine oil reimbursement.

If the replacement of the Oil Cooler Tube Assembly was required, please manually enter the applicable Oil Cooler Tube Assembly part number to the claim's related parts section.

Dispose of old parts in accordance with local, state, and Federal regulations.

*** NOTICE**

VIN inquiry data for this repair is provided for tracking purposes only. Kia retailers should reference PI1802W/X* when accessing the WebDCS system.

Appendix 1 (Warranty Claim Authorization)

Scenario		Description	Action Required
1	Campaign - TSB # PI1802W/X Case for Warranty Authorization **NO INSPECTION**	Wiring Signal Interference Check cannot be completed due to engine seizure or other engine failure (won't run long enough to complete the test)	**TL PWA required for all dealers – Video of condition and WRTY143 form required*** Video requirement examples below are for illustration purposes, individual requirements will vary based upon the condition reported: • Video should be continuous and show the VIN (most convenient VIN plate) and pan to show the engine condition • For engine seizures, attempt to turn over engine with breaker bar in video • For hole in engine block, show hole in video

Appendix 2 (Video Capture & Upload)

Capturing a video is often helpful in assisting the Kia Techline Agent in determining a proper diagnosis strategy. Once a TechLine case is open, the following procedure will guide you through the video capture and upload.

The Chrome™ browser should be used to access the Techline portal. Follow the steps below to clear the default browser if it is other than Chrome™.

For KDS Tab 10.1 Tablets:

1. Select "Settings" from the App Screen.
2. Select the "General" tab at the top.
3. Select "Default Applications".
4. If "Internet" is the default browser, select the CLEAR button.

   If "Chrome" is the default browser, further action is not required.



5. When opening the Techline portal, select "Chrome" and select Always".



For KDS Tab S2 Tablets:

1. Select "Settings" from the App Screen.
2. Select "Applications".
3. Select "Default Applications".



4. Select "Browser app".



5. Ensure "Chrome" is selected.



Setting Your Video Size to "Limit to Email"

1. Select "Camera" from the App Screen.



2. Select the Settings icon.



3. Select the Video Camera icon.



4. Ensure "Limit to email" is selected.



Attaching Video to a Techline Case

1. Open K-Support in the device Chrome™ browser or select the "Techline" button on KDS home page.

   https://ksupport.kiausa.com



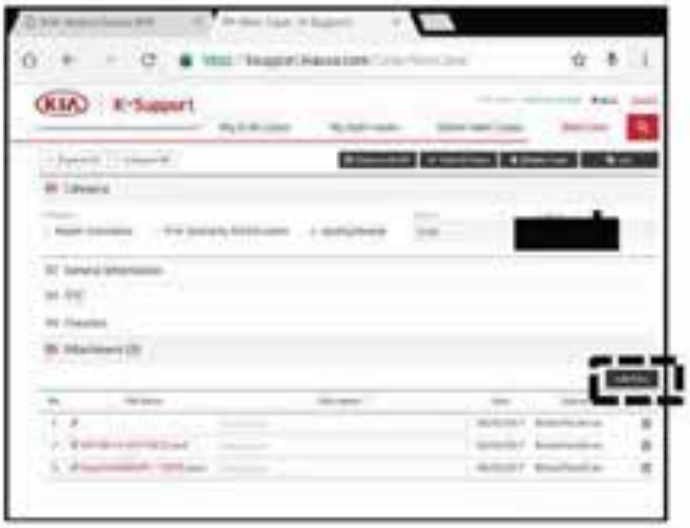
2. Open your existing Techline case for the vehicle requiring a video capture by selecting the case number.



3. Select "Attachment".



4. Select "Add Files".



5. Select "Camcorder" and the video camera will open.



6. Start by recording the VIN. Ensure sun glare is not reflecting off windows or other objects.

   Without stopping the recording, capture the area of the vehicle displaying the issue. i.e.;

   - Engine Noise – record the engine.
   - Hole In Block – record the side of the engine with the damage.
   - Seized Engine – record a technician trying to turn the engine over with a breaker bar.



*** NOTICE**

NOTE: Ensure the video size is set to "Limit to email" (see page 24). <u>Only record the VIN and the engine exhibiting the concern.</u> Any additional information will increase the size of the video and make it difficult to upload or download.

7. Stop the video when you captured what is needed. Select "OK" to use this capture or "RETRY" to capture the video again.

8. Ensure a description of the recording. For example, engine knock or smoke from exhaust.

9. Select "Submit Case".



10. Select "Yes" when the confirmation message below appears.

    Note: Selecting anything other than "Yes" will not save the video capture.



PE19-004

KIA

TAB 6 _ PI1802WX_TSB_R1

	GROUP	MODEL
KIA	**Product Improvement**	**2015MY Sorento (XMa) Optima (QF) 2014-2015MY Optima (TF) Sportage (SL)**
	NUMBER	DATE
	PI1802W/X (Rev 1, 11/08/2018)	**October 2018**

PRODUCT IMPROVEMENT CAMPAIGN

SUBJECT: ENGINE REPLACEMENT INSTRUCTIONS FOR DTC P1326 (PI1802W/X)

★ NOTICE

This bulletin has been revised to include additional information. New/revised sections of this bulletin are indicated by a black bar in the margin area.

This bulletin provides information related to the Technical Service Bulletin previously published in July 2018 (PI1802, Rev 2, 09/24/2018) titled "Knock Sensor Detection System - ECU Logic Improvement". Specifically, this bulletin provides instructions on which procedures to follow if, after installation of the KSDS, any one of the subject vehicles below returns to the dealer with Diagnostic Trouble Code ("DTC"), P1326.

- Some 2014MY Optima (TF) vehicles equipped with 2.4L GDI engines, manufactured at KMC from August 29, 2013 through April 25, 2014;
- All 2015MY Optima (TF/QF) vehicles equipped with 2.4L GDI and 2.0L Turbocharged GDI (T-GDI) engines;
- All 2014-2015MY Sportage (SL) vehicles equipped with 2.4L GDI and 2.0L Turbocharged GDI (T-GDI) engines;
- All 2015MY Sorento (XMa) vehicles equipped with 2.4L GDI engines, manufactured from January 3, 2014 through December 11, 2014.

If DTC P1326 is present, first check for any wiring signal interference following the procedure set forth below before determining whether an engine replacement is necessary. Based on the results of the Wiring Signal Interference Check, dealers are to perform either the Knock Sensor Wiring Repair or the Engine Long-Block Replacement according to the procedures in this TSB.

If the vehicle's engine is already seized or severely knocking, dealers are to perform the Engine Long-Block Replacement **and** the Wiring Signal Interference Check according to the procedures in this TSB.

Before conducting the procedure, verify the vehicle is included in the list of affected VINs.

★ NOTICE

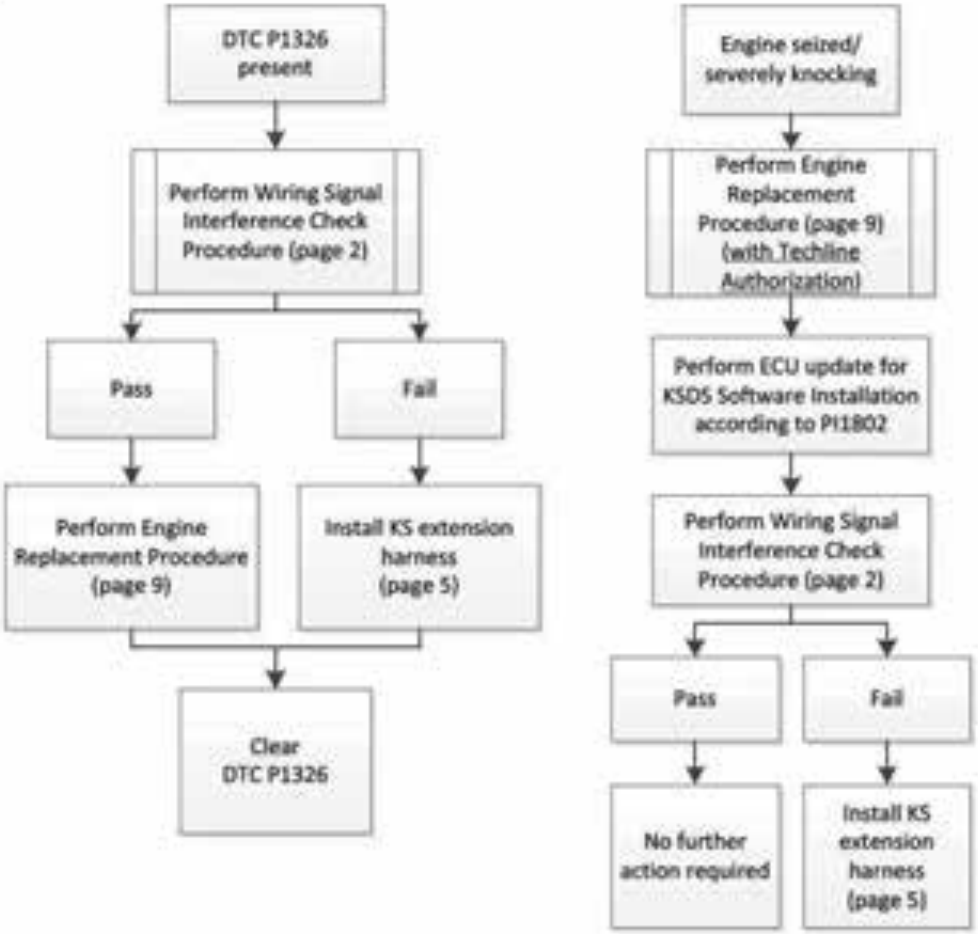
To ensure complete customer satisfaction, always remember to refer to WebDCS Warranty Coverage (validation) Inquiry Screen (Service → Warranty Coverage → Warranty Coverage Inquiry) for a list of any additional campaigns that may need to be performed on the vehicle before returning it to the customer.

File Under: <Product Improvement>

Circulate To: ☒ General Manager ☒ Service Manager ☒ Parts Manager ☒ Service Advisors ☒ Technicians ☒ Body Shop Manager ☐ Fleet Repair

SUBJECT: ENGINE REPLACEMENT INSTRUCTIONS FOR DTC P1326 (PI1802W/X)

Flow Chart:



Wiring Signal Interference Check Procedure:

1. Using the KDS, perform a Fault Code Search and confirm DTC P1326 is present.
   - If P1326 is present, proceed to the next step to perform the wiring signal interference check.
   - If the engine is seized or severely knocking, proceed to the engine replacement procedure on page 9.



2. Start/warm up the engine and ensure **ENGINE OIL** is at operating temperature (176°F).



3. From the KDS Home Screen, select S/W Management.



4. Select Engine Control → Wiring Signal Interference Check.



5. Ensure the engine is on and at idle and **ENGINE OIL** temperature is at 176°F degrees or higher. Select OK to proceed.



5b. Select OK to proceed.

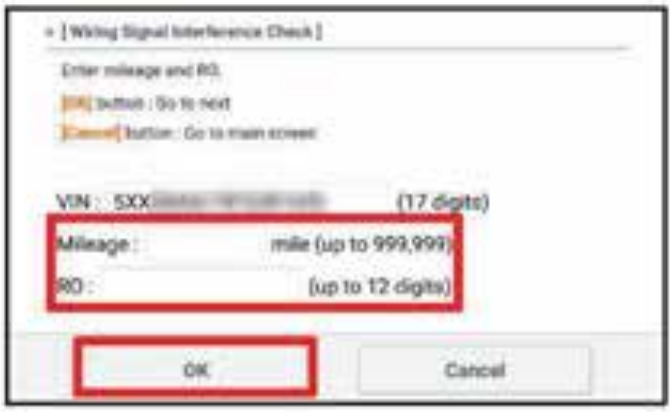
NOTE: This test should only be performed if Knock Sensor Detection System - ECU Logic Improvement (PI1802) has previously been completed.



5c. If the conditions are not met, a pop-up as shown will be displayed.



6. Enter vehicle mileage and RO number (VIN is automatically populated).



7. Wiring Signal Interference Check test will begin and take about three (3) minutes to complete. **NOTE**: Do not push on the accelerator pedal.



- If the result is "OK", turn the engine off and proceed to the Engine Replacement procedure on page 9.



- If the result is "NOT OK", turn the engine off and proceed to **step 2** of the Knock Sensor (KS) Extension Harness Installation procedure on page 5.



KS Extension Harness Installation Procedure:

NOTE: Photos below are from a 15MY Optima (QF). Components and their location may vary in different models.

1. Inspect the ECU harness (A) and verify if the Knock Sensor wiring extension harness (B) has previously been installed.

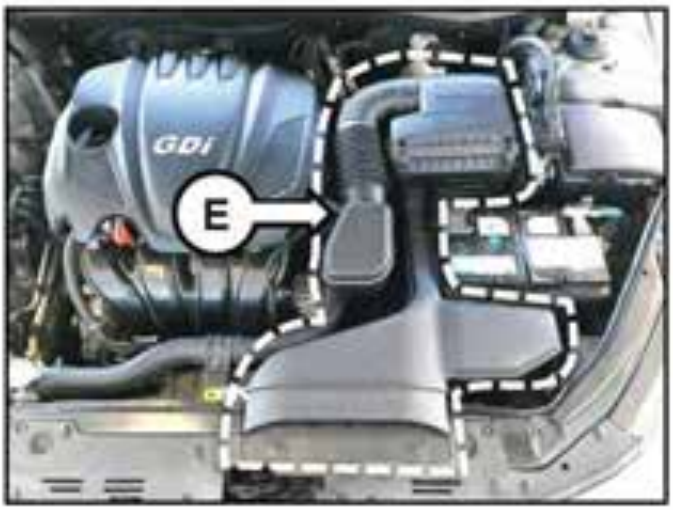
   NOTE: To identify the extension harness (B), look for an external harness (B) which should be cable-tied to the existing wiring harness (A) leading by the intake manifold (C) to the knock sensor (D), as shown.

   - If the extension harness (B) has been installed, no further action is required.
   - If the extension harness (B) has not been installed, proceed to the next step.

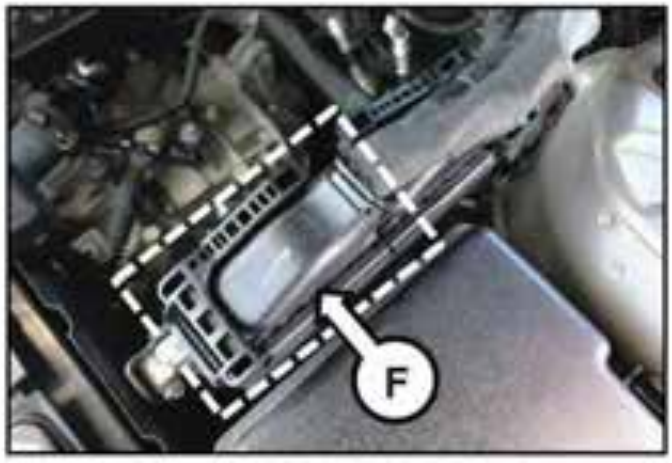




2. Remove the air cleaner and duct assembly (E).



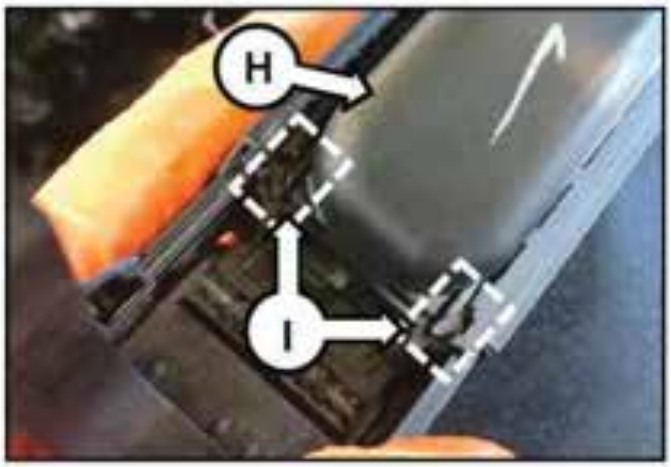
3. Disconnect the ECU connector (F).



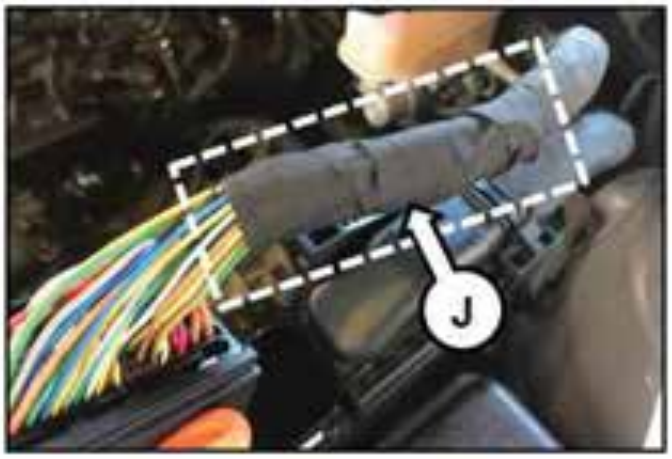
4. Cut the existing cable-tie (G) from the connector.



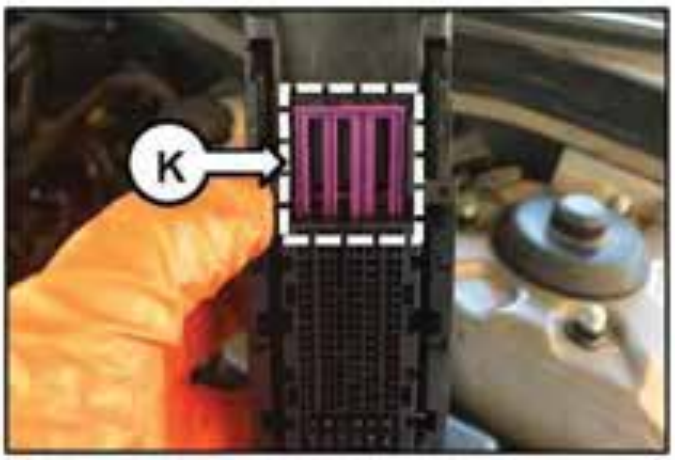
5. Remove the ECU connector cover (H) by carefully unclipping the two (2) tabs (I) and sliding the cover (H) towards the tabs (I).



6. Carefully remove the electrical tape (J) to expose the harness wires.



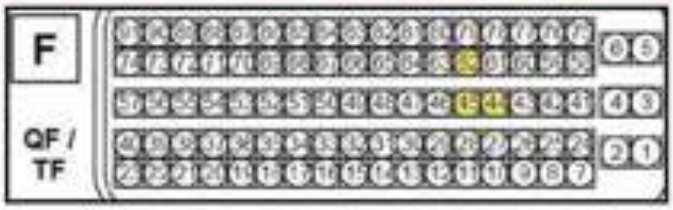
7. Remove the pin retainer (K).



8. Locate the three (3) knock sensor circuit terminals from the ECU connector (F). Refer to the "Schematic Diagrams → Engine Electrical System → Engine Control System → Schematic Diagrams" chapter of the applicable ETM on KGIS.

44. Knock Sensor Shielded Ground
45. Knock Sensor Ground
62. Knock Sensor Interface (Signal)

Click here to see a video of terminal removal.





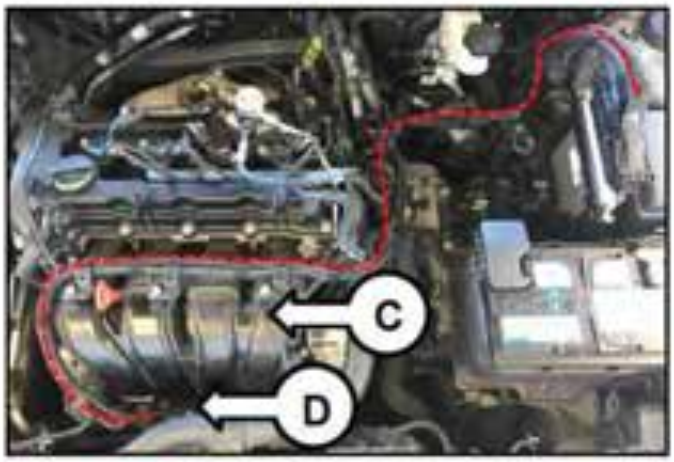
9. Remove the three (3) terminals **one at a time** and insert the new terminals of the extension harness into the ECU connector (F). Reinstall pin retainer (K) and reassemble the connector (F).

Pin	Extension Wire Color
44	Blue
45	Black
62	Red

NOTE: Be sure to note the rotational position of the terminals during removal. They are directional and need to be reinstalled in the same "clock" position.



10. Route the extension harness (B) along the existing harness (A) leading by the intake manifold (C) to the knock sensor (D), as shown.



★ IMPORTANT

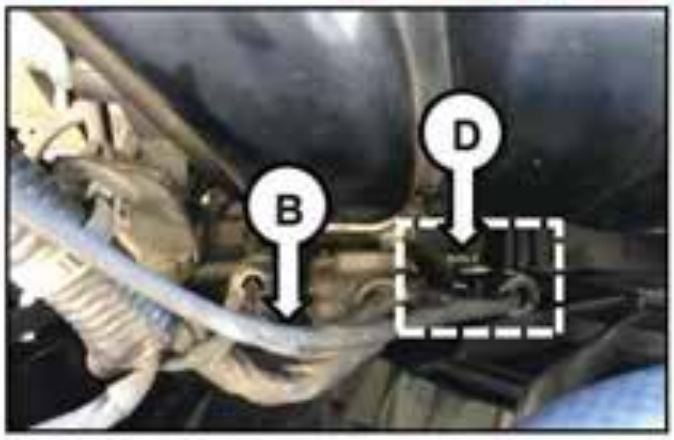
The harness (B) must be routed above and secured to the harness protector (L1) and UNDER the Breather Hose (L2) and Camshaft Position Sensor (L3).





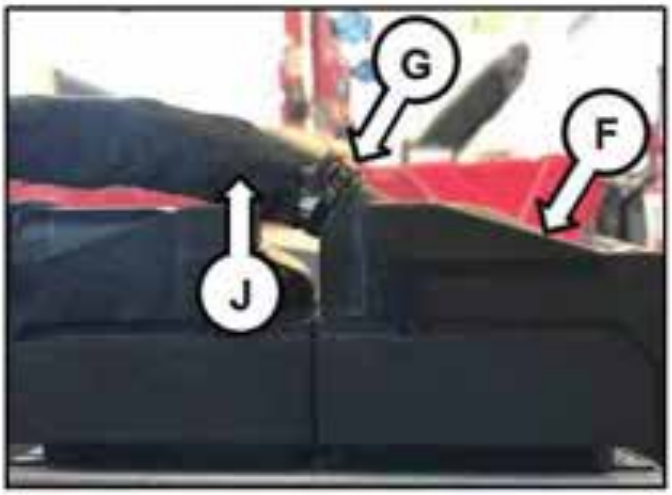


11. Connect the extension harness (B) to the knock sensor (D).

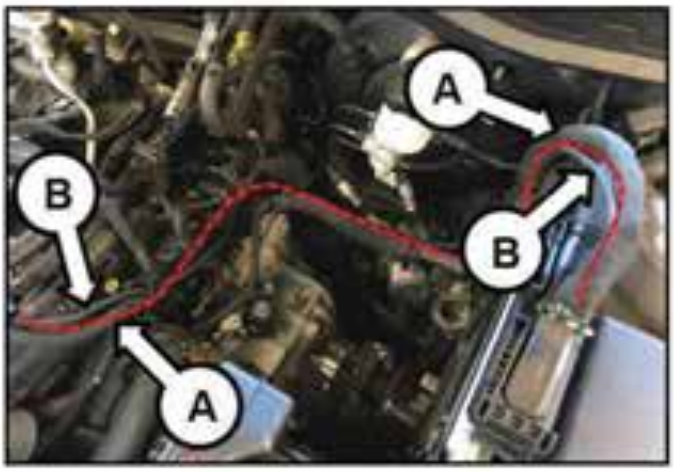


12. Cut off and discard the three (3) old knock sensor circuit terminals and the old knock sensor connector and secure the remaining wires to the new extension harness using the supplied electrical tape. **NOTE**: Complete removal of the old knock sensor wires is not necessary. Only remove the old terminals and connector.

13. Secure the extension harness at the connector (F) by replacing the cable-tie (G) removed in step 4 with a new supplied cable-tie and the electrical tape (J) removed in step 6 with new supplied electrical tape.



14. Secure the extension harness (B) to the existing harness (A) using the supplied cable-ties. Tuck and secure any excess wiring of the extension harness near the ECU with cable-tie.



15. Reinstall all removed components in the reverse order of removal.

16. Erase the P1326 DTC with the KDS and start the engine to confirm proper operation.

Engine Replacement Procedure:

1. Remove the engine assembly by referring to the "Engine And Transmission (Transaxle) Assembly → Engine And Transmission (Transaxle) Assembly → Repair procedures" chapter in the applicable Shop Manual on KGIS.

   Refer to TSB ENG190 for information regarding engine replacement practices.



2. After removal of the engine from the vehicle, remove all components that will need to be transferred by referring to the applicable Shop Manual on KGIS.

3. Place the new engine block on an engine stand.

4. Install all removed components from the old engine block onto the new engine block utilizing all parts from Service Kit I and II. Be advised of notes below.

Notes:

High Pressure Pump & Roller Tappet:

- Refer to TSB ENG083 for special attention and handling procedures of GDI-specific components.
- When installing the high pressure pump and roller tappet onto the new engine, apply engine oil to the roller tappet, and O-rings of the high pressure pump.

Tightening torques of pump bolts:
9.4 – 10.9 lb.ft (12.8 – 14.7 N.m, 1.3 – 1.5 kgf.m)

Tightening torques of pipe flare nut:
19.5 – 23.9 lb.ft (26.5 – 32.4 N.m, 2.7 – 3.3 kgf.m)

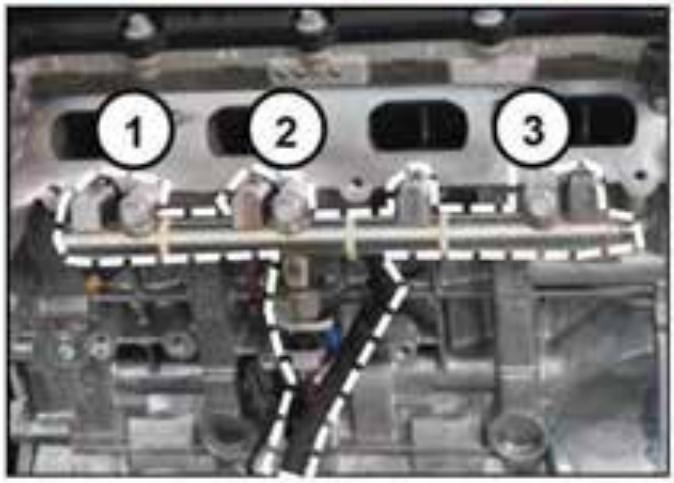


*** NOTICE**

Refer to TSB ENG083 for gasoline direct injection (GDI) specific information, including related warnings and cautions for handling high fuel pressure system components.

Delivery Pipe:

- Refer to TSB ENG083 for special attention and handling procedures of GDI-specific components.
- Prior to installing the delivery pipe, be sure to replace all of the injector O-rings and injector retainers.
- Prior to installing the delivery pipe, apply engine oil to the injector O-rings.
- When installing the delivery pipe, use caution not to damage the tip of the injector.
- Be sure to replace the delivery pipe retaining bolts and torque them in the sequence shown.



Tightening torque of bolts:
13.7 – 17.4 lb.ft (18.6 – 23.5 N.m, 1.9 – 2.4 kgf.m)

*** NOTICE**

Combustion seals must be compressed after installation and before attempting to install into the cylinder head. Use SST 09353 2B000 (refer to TSB ENG083).

Dipstick Tube & Dipstick:

- Prior to installing the new tube, lubricate the o-ring located at the bottom of the tube with engine oil.
- Install the red dipstick included in Service Kit I.

Tightening torque of bolt:
5.8 – 8.7 lb.ft (7.8 – 11.8 N.m, 0.8 - 1.2 kgf.m)



Intake Manifold:

- Prior to installation, replace the intake manifold gaskets.
- Torque bolts in the sequence shown.

Tightening torque of bolts:
13.7 – 17.4 lb.ft (18.6 – 23.5 N.m, 1.9 – 2.4 kgf.m)

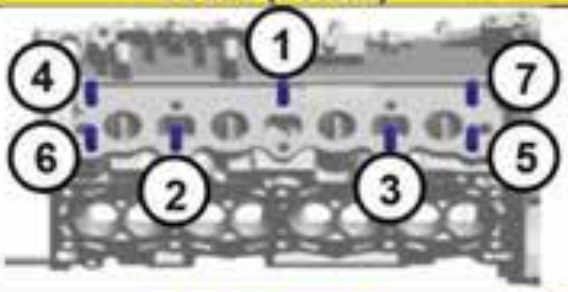


Exhaust Manifold:

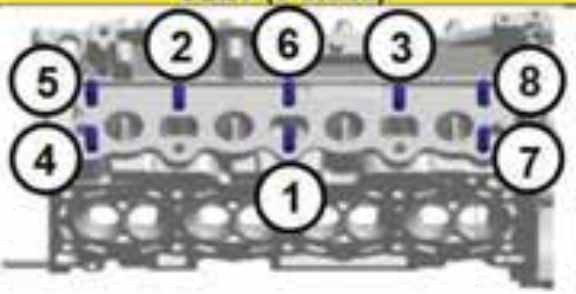
- All engines supplied under this Product Improvement Campaign have the exhaust manifold studs configured for SULEV engines.
- Using the pictures to the right, check the exhaust manifold stud location and quantity. Relocate as required for ULEV engines and obtain one (1) extra from the removed engine.
- Prior to installation, replace the exhaust manifold gasket and front muffler gasket.
- Torque nuts in the sequence shown.

Tightening torque of nuts:
36.2 – 39.7 lb.ft (49.0 – 53.9 N.m, 5.0 – 5.5 kgf.m)

SULEV (7 studs)



ULEV (8 studs)

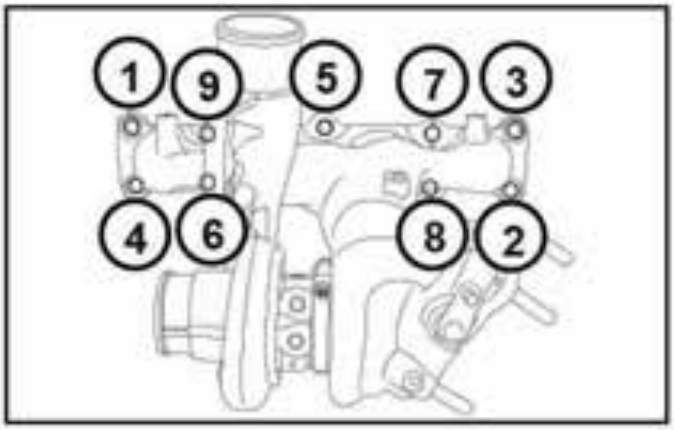


***For 15MY Sorento (XMa) vehicles only: check the underhood emissions label and record whether the label references ULEV or SULEV. This information is needed to select/order the correct replacement engine.**



- On Turbo engines, replace the turbocharger oil feed line and gaskets.

Tightening torque of oil feed line bolt:
8.7 – 13.0 lb.ft (11.8 – 17.7 N.m, 1.2 – 1.8 kgf.m)
Tightening torque of oil feed line nuts:
5.8 – 8.7 lb.ft (7.8 – 11.8 N.m, 0.8 – 1.2 kgf.m)
Tightening torque of oil drain line nuts and bolts:
5.8 – 8.7 lb.ft (7.8 – 11.8 N.m, 0.8 – 1.2 kgf.m)



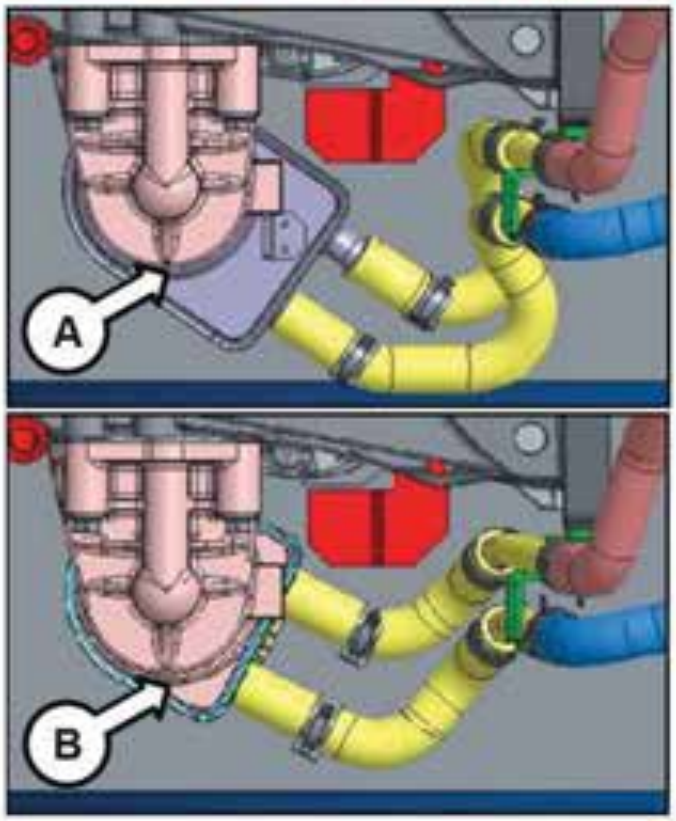
- Torque exhaust manifold nuts in the sequence shown.

Tightening torque of nuts:
36.2 – 39.7 lb.ft (49.0 – 53.9 N.m, 5.0 – 5.5 kgf.m)

Oil Cooler Tube Assembly:

New engines may be supplied with a different oil cooler. Use steps below to determine the need for a replacement oil cooler tube assembly.

- If the new engine's (bigger) oil cooler (A) does not match the old engine's (smaller) oil cooler (B), replace the oil cooler tube assembly with the improved part. See parts table on page 15.
- If the new engine's (bigger) oil cooler (A) matches the old engine's (bigger) oil cooler (A), reuse the old engine's oil cooler tube assembly.
- If the new engine's (smaller) oil cooler (B) matches the old engine's (smaller) oil cooler (B), reuse the old engine's oil cooler tube assembly.



Drive Plate Bolts:

- Replace all seven (7) drive plate (AT) bolts.

Tightening torque of nuts:
86.8 – 93.9 lb.ft (117.7 – 125.5 N.m, 12.0 – 13.0 kgf.m)



Drive Plate Bolt (A/T)

Torque Converter

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


Not Fully Inserted


Fully Inserted

5. Reinstall the assembled engine and transmission/transaxle into the vehicle.

   Be sure to:

   - Fill crankcase with 5W-30 oil (~5.8 quarts).
   - Fill and bleed the cooling system with 50/50 coolant or mixture appropriate for area.
   - Pressurize the fuel system before starting the vehicle.
   - Reset engine adaptive values and perform steering angle sensor calibration.

   Refer to TSB ENG190 for information regarding engine replacement practices.

6. Verify proper operation of the vehicle with road test, and **erase any stored DTCs** (e.g., EPS, ESC, and TPMS) that may have been set by this procedure. Verify no leaks exist and ensure engine oil and coolant are at their proper level.

   If any DTCs are still active, follow any related diagnosis and repair as needed.

SUBJECT: ENGINE REPLACEMENT INSTRUCTIONS FOR DTC P1326 (PI1802W/X)

AFFECTED VEHICLE RANGE:

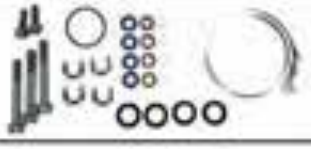
Model	Production Date Range
15MY Sorento (XMa) (2.4)	January 3, 2014 through December 11, 2014
14MY Optima (TF) (2.4)	August 29, 2013 through April 25, 2014
14-15MY Sportage (SL) (2.4 & 2.0T)	September 30, 2013 through April 8, 2015
15MY Optima (QF/TF) (2.4 & 2.0T)	April 16, 2014 through October 2, 2015

REQUIRED TOOL:

Tool Name	Tool Part No.	Figure	Comments
Torque Wrench Socket	09314 3Q100		Refer to TSB ENG083 for detailed usage instructions
Injector Combustion Seal Ring Installer	09353 2B000		
Pin Tool	91400 00000QQK		Auto-shipped to Dealers

REQUIRED PARTS:

Part Name	MY	Model	Part Number		Figure
			2.4GDI	2.0T-GDI	
Engine Long Block	2014-2015	TF	21101 2GK06QQKR	-	
		SL	21101 2GK36QQKR	21101 2GK37QQKR	
	2015	QF	21101 2GK06QQKR	21101 2GK08QQKR	
		XMa ULEV & SULEV	21101 2GK11QQKR	-	

Part Name	Engine	Part Number	Figure
Service Kit I	2.4GDI	21111 2GK50QQK	
	2.0T-GDI	21111 2GK60QQK	
Service Kit II	2.4GDI and 2.0T-GDI	21111 2GK70QQK	

SUBJECT: ENGINE REPLACEMENT INSTRUCTIONS FOR DTC P1326 (PI1802W/X)

Part Name	Engine	Part Number	Figure
Drive Plate Bolts	2.4GDI and 2.0T-GDI	23311 25050	
Oil Cooler Tube Assembly (replacement is conditional, refer to page 12)	2.4GDI	25470 2G050QQK	
	2.0T-GDI	25470 2G650QQK	
KS Extension Harness	2.4GDI and 2.0T-GDI	91400 2T000QQK	

WARRANTY INFORMATION (PI1802**W1**, MIL ON WITH P1326):
N Code: N99 C Code: C99

Model	Claim Type	Causal P/N	Qty.	Repair Description	Labor Op Code	Op Time	Replacement P/N	Qty.
Sor. (XMa)	R	21020 2G010	0	(PI1802**W1**) 2.4L GDI 2WD MIL ON with P1326, KSDS Wire Harness Inspection Pass, & Engine Replacement	180A12R0	8.4 M/H	21111 2GK50QQK	1
							21111 2GK70QQK	1
							23311 25050	7
							(ULEV or SULEV) 21101 2GK11QQKR	1
				(PI1802**W1**) 2.4L GDI 2WD MIL ON with P1326, KSDS Wire Harness Inspection Fail, KSDS Extension Harness Install	180A12R2	0.8 M/H	91400 2T000QQK	1
				(PI1802**W1**) 2.4L GDI AWD MIL ON with P1326, KSDS Wire Harness Inspection Pass, & Engine Replacement	180A12R1	8.6 M/H	21111 2GK50QQK	1
							21111 2GK70QQK	1
							23311 25050	7
							(ULEV or SULEV) 21101 2GK11QQKR	1
				(PI1802**W1**) 2.4L GDI AWD MIL ON with P1326, KSDS Wire Harness Inspection Fail, KSDS Extension Harness Install	180A12R3	0.8 M/H	91400 2T000QQK	1

SUBJECT: ENGINE REPLACEMENT INSTRUCTIONS FOR DTC P1326 (PI1802W/X)

Model	Claim Type	Causal P/N	Qty.	Repair Description	Labor Op Code	Op Time	Replacement P/N	Qty.
Opt. (QF)	R	23060 2G400	0	(PI1802W1) 2.4L GDI MIL ON with P1326, KSDS Wire Harness Inspection Pass, & Engine Replacement	180A16R1	8.4 M/H	21111 2GK50QQK	1
							21111 2GK70QQK	1
							23311 25050	7
							21101 2GK06QQKR	1
				(PI1802W1) 2.4L GDI MIL ON with P1326, KSDS Wire Harness Inspection Fail, KSDS Extension Harness Install	180A16R3	0.8 M/H	91400 2T000QQK	1
				(PI1802W1) 2.0L T-GDI MIL ON with P1326, KSDS Wire Harness Inspection Pass, & Engine Replacement	180A16R0	8.6 M/H	21111 2GK60QQK	1
							21111 2GK70QQK	1
							23311 25050	7
							21101 2GK06QQKR	1
				(PI1802W1) 2.0L T-GDI MIL ON with P1326, KSDS Wire Harness Inspection Fail, KSDS Extension Harness Install	180A16R2	0.8 M/H	91400 2T000QQK	1
Opt. (TF)	R	23060 2G400	0	(PI1802W1) 2.4L GDI MIL ON with P1326, KSDS Wire Harness Inspection Pass, & Engine Replacement	180111R0	8.4 M/H	21111 2GK50QQK	1
							21111 2GK70QQK	1
							23311 25050	7
							21101 2GK06QQKR	1
				(PI1802W1) 2.4L GDI MIL ON with P1326, KSDS Wire Harness Inspection Fail, KSDS Extension Harness Install	180111R5	0.8 M/H	91400 2T000QQK	1

SUBJECT: ENGINE REPLACEMENT INSTRUCTIONS FOR DTC P1326 (PI1802W/X)

Model	Claim Type	Causal P/N	Qty.	Repair Description	Labor Op Code	Op Time	Replacement P/N	Qty.
Spo. (SL)	R	23060 2G400	0	(PI1802W1) 2.4L GDI 2WD MIL ON with P1326, KSDS Wire Harness Inspection Pass, & Engine Replacement	160112R0	7.7 M/H	21111 2GK50QQK	1
							21111 2GK70QQK	1
							23311 25050	7
							21101 2GK36QQKR	1
				(PI1802W1) 2.4L GDI 2WD MIL ON with P1326, KSDS Wire Harness Inspection Fail, KSDS Extension Harness Install	160112R5	0.9 M/H	91400 2T000QQK	1
				(PI1802W1) 2.4L GDI AWD MIL ON with P1326, KSDS Wire Harness Inspection Pass, & Engine Replacement	160112R2	8.1 M/H	21111 2GK50QQK	1
							21111 2GK70QQK	1
							23311 25050	7
							21101 2GK36QQKR	1
				(PI1802W1) 2.4L GDI AWD MIL ON with P1326, KSDS Wire Harness Inspection Fail, KSDS Extension Harness Install	160112R7	0.9 M/H	91400 2T000QQK	1
				(PI1802W1) 2.0L T-GDI 2WD MIL ON with P1326, KSDS Wire Harness Inspection Pass, & Engine Replacement	160112R3	7.7 M/H	21111 2GK60QQK	1
							21111 2GK70QQK	1
							23311 25050	7
							21101 2GK37QQKR	1
				(PI1802W1) 2.0L T-GDI 2WD MIL ON with P1326, KSDS Wire Harness Inspection Fail, KSDS Extension Harness Install	160112R8	0.9 M/H	91400 2T000QQK	1
				(PI1802W1) 2.0L T-GDI AWD MIL ON with P1326, KSDS Wire Harness Inspection Pass, & Engine Replacement	160112R4	8.1 M/H	21111 2GK60QQK	1
							21111 2GK70QQK	1
							23311 25050	7
							21101 2GK37QQKR	1
				(PI1802W1) 2.0L T-GDI AWD MIL ON with P1326, KSDS Wire Harness Inspection Fail, KSDS Extension Harness Install	160112R9	0.9 M/H	91400 2T000QQK	1

SUBJECT: ENGINE REPLACEMENT INSTRUCTIONS FOR DTC P1326 (PI1802W/X)

WARRANTY INFORMATION (PI1802X1, ENGINE SEIZED/SEVERE KNOCKING):

N Code: N99 C Code: C99

Model	Claim Type	Causal P/N	Qty.	Repair Description	Labor Op Code	Op Time	Replacement P/N	Qty.
Sor. (XMa)	R	21020 2G010	0	(PI1802X1) 2.4L GDI 2WD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Pass	180A12R8	8.4 M/H	21111 2GK50QQK	1
							21111 2GK70QQK	1
							23311 25050	7
							(ULEV or SULEV) 21101 2GK11QQKR	1
				(PI1802X1) 2.4L GDI AWD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Pass	180A12R9	8.6 M/H	21111 2GK50QQK	1
							21111 2GK70QQK	1
							23311 25050	7
							(ULEV or SULEV) 21101 2GK11QQKR	1
				(PI1802X1) 2.4L GDI 2WD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Fail, KSDS Wire Harness Install	180A12RA	8.9 M/H	21111 2GK50QQK	1
							21111 2GK70QQK	1
							23311 25050	7
							(ULEV or SULEV) 21101 2GK11QQKR	1
							91400 2T000QQK	1
				(PI1802X1) 2.4L GDI AWD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Fail, KSDS Wire Harness Install	180A12RB	9.1 M/H	21111 2GK50QQK	1
							21111 2GK70QQK	1
							23311 25050	7
							(ULEV or SULEV) 21101 2GK11QQKR	1
							91400 2T000QQK	1

SUBJECT: ENGINE REPLACEMENT INSTRUCTIONS FOR DTC P1326 (PI1802W/X)

Model	Claim Type	Causal P/N	Qty.	Repair Description	Labor Op Code	Op Time	Replacement P/N	Qty.
Opt. (QF)	R	23060 2G400	0	(PI1802X1) 2.4L GDI Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Pass	180A16R9	8.4 M/H	21111 2GK50QGK	1
							21111 2GK70QGK	1
							23311 25050	7
							21101 2GK06QGKR	1
				(PI1802X1) 2.0L T-GDI Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Pass	180A16R8	8.7 M/H	21111 2GK60QGK	1
							21111 2GK70QGK	1
							23311 25050	7
							21101 2GK06QGKR	1
				(PI1802X1) 2.4L GDI Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Fail, KSDS Wire Harness Install	180A16RB	8.9 M/H	21111 2GK50QGK	1
							21111 2GK70QGK	1
							23311 25050	7
							21101 2GK06QGKR	1
							91400 2T000QGK	1
				(PI1802X1) 2.0L T-GDI Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Fail, KSDS Wire Harness Install	180A16RA	9.2 M/H	21111 2GK60QGK	1
							21111 2GK70QGK	1
							23311 25050	7
							21101 2GK06QGKR	1
							91400 2T000QGK	1
Opt. (TF)	R	23060 2G400	0	(PI1802X1) 2.4L GDI Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Pass	18D111RA	8.4 M/H	21111 2GK50QGK	1
							21111 2GK70QGK	1
							23311 25050	7
							21101 2GK06QGKR	1
				(PI1802X1) 2.4L GDI Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Fail, KSDS Wire Harness Install	18D111RF	8.9 M/H	21111 2GK50QGK	1
							21111 2GK70QGK	1
							23311 25050	7
							21101 2GK06QGKR	1
							91400 2T000QGK	1

SUBJECT: ENGINE REPLACEMENT INSTRUCTIONS FOR DTC P1326 (PI1802W/X)

Model	Claim Type	Causal P/N	Qty.	Repair Description	Labor Op Code	Op Time	Replacement P/N	Qty.
Spo. (SL)	R	23060 2G400	0	(PI1802X1) 2.4L GDI 2WD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Pass	180112RA	7.7 M/H	21111 2GK50QGK	1
							21111 2GK70QGK	1
							23311 25050	7
							21101 2GK36QGKR	1
				(PI1802X1) 2.4L GDI AWD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Pass	180112RC	8.1 M/H	21111 2GK50QGK	1
							21111 2GK70QGK	1
							23311 25050	7
							21101 2GK36QGKR	1
				(PI1802X1) 2.0L T-GDI 2WD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Pass	180112RD	7.7 M/H	21111 2GK60QGK	1
							21111 2GK70QGK	1
							23311 25050	7
							21101 2GK37QGKR	1
				(PI1802X1) 2.0L T-GDI AWD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Pass	180112RE	8.1 M/H	21111 2GK60QGK	1
							21111 2GK70QGK	1
							23311 25050	7
							21101 2GK37QGKR	1
				(PI1802X1) 2.4L GDI 2WD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Fail, KSDS Wire Harness Install	180112RF	8.3 M/H	21111 2GK50QGK	1
							21111 2GK70QGK	1
							23311 25050	7
							21101 2GK36QGKR	1
							91400 2T000QGK	1
				(PI1802X1) 2.4L GDI AWD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Fail, KSDS Wire Harness Install	180112RH	8.7 M/H	21111 2GK50QGK	1
							21111 2GK70QGK	1
							23311 25050	7
							21101 2GK36QGKR	1
							91400 2T000QGK	1
				(PI1802X1) 2.0L T-GDI 2WD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Fail, KSDS Wire Harness Install	180112RI	8.3 M/H	21111 2GK60QGK	1
							21111 2GK70QGK	1
							23311 25050	7
							21101 2GK37QGKR	1
							91400 2T000QGK	1
				(PI1802X1) 2.0L T-GDI AWD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Fail, KSDS Wire Harness Install	180112RJ	8.7 M/H	21111 2GK60QGK	1
							21111 2GK70QGK	1
							23311 25050	7
							21101 2GK37QGKR	1
							91400 2T000QGK	1

NOTE: Refer to Warranty Bulletin 2018-10 for details regarding coolant and substitute transportation reimbursement requirements.

Use sublet code 'X3' with a maximum allowed amount of $19.80 for "ENGINE R&R" engine oil reimbursement.

If the replacement of the Oil Cooler Tube Assembly was required, please manually enter the applicable Oil Cooler Tube Assembly part number to the claim's related parts section.

Dispose of old parts in accordance with local, state, and Federal regulations.

*** NOTICE**

VIN inquiry data for this repair is provided for tracking purposes only. Kia retailers should reference PI1802W/X* when accessing the WebDCS system.

Appendix 1 (Warranty Claim Authorization)

Scenario		Description	Action Required
1	Campaign - TSB # PI1802W/X Case for Warranty Authorization **NO INSPECTION**	Wiring Signal Interference Check cannot be completed due to engine seizure or other engine failure (won't run long enough to complete the test)	**TL PWA required for all dealers – Video of condition and WRTY143 form required*** Video requirement examples below are for illustration purposes, individual requirements will vary based upon the condition reported: • Video should be continuous and show the VIN (most convenient VIN plate) and pan to show the engine condition • For engine seizures, attempt to turn over engine with breaker bar in video • For hole in engine block, show hole in video

Appendix 2 (Video Capture & Upload)

Capturing a video is often helpful in assisting the Kia Techline Agent in determining a proper diagnosis strategy. Once a TechLine case is open, the following procedure will guide you through the video capture and upload.

The Chrome™ browser should be used to access the Techline portal. Follow the steps below to clear the default browser if it is other than Chrome™.

For KDS Tab 10.1 Tablets:

1. Select "Settings" from the App Screen.
2. Select the "General" tab at the top.
3. Select "Default Applications".
4. If "Internet" is the default browser, select the CLEAR button.

   If "Chrome" is the default browser, further action is not required.



5. When opening the Techline portal, select "Chrome" and select Always".



For KDS Tab S2 Tablets:

1. Select "Settings" from the App Screen.
2. Select "Applications".
3. Select "Default Applications".



4. Select "Browser app".



5. Ensure "Chrome" is selected.



Setting Your Video Size to "Limit to Email"

1. Select "Camera" from the App Screen.



2. Select the Settings icon.



3. Select the Video Camera icon.



4. Ensure "Limit to email" is selected.



Attaching Video to a Techline Case

1. Open K-Support in the device Chrome™ browser or select the "Techline" button on KDS home page.

   https://ksupport.kiausa.com



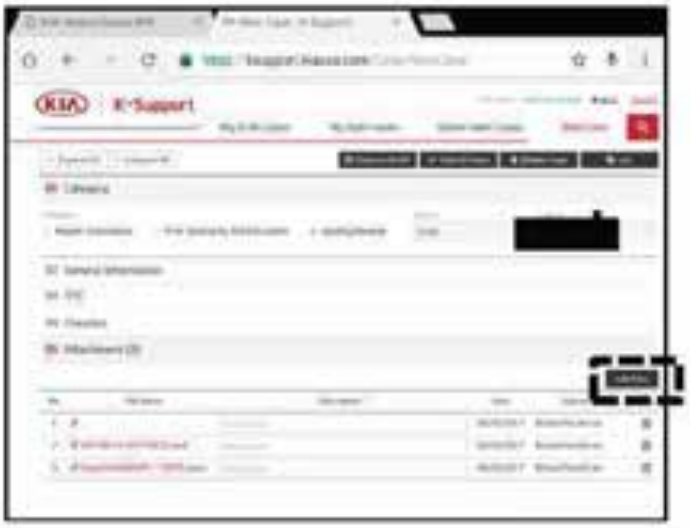
2. Open your existing Techline case for the vehicle requiring a video capture by selecting the case number.



3. Select "Attachment".



4. Select "Add Files".



5. Select "Camcorder" and the video camera will open.



6. Start by recording the VIN. Ensure sun glare is not reflecting off windows or other objects.

   Without stopping the recording, capture the area of the vehicle displaying the issue. i.e.;

   - Engine Noise – record the engine.
   - Hole In Block – record the side of the engine with the damage.
   - Seized Engine – record a technician trying to turn the engine over with a breaker bar.



*** NOTICE**

NOTE: Ensure the video size is set to "Limit to email" (see page 24). <u>Only record the VIN and the engine exhibiting the concern.</u> Any additional information will increase the size of the video and make it difficult to upload or download.

7. Stop the video when you captured what is needed. Select "OK" to use this capture or "RETRY" to capture the video again.

8. Ensure a description of the recording. For example, engine knock or smoke from exhaust.

9. Select "Submit Case".



10. Select "Yes" when the confirmation message below appears.

    Note: Selecting anything other than "Yes" will not save the video capture.



PE19-004

KIA

TAB 64_ PI1802WX_TSB_R2

	GROUP	MODEL
KIA	**Product Improvement**	**See Model List on Page 1**
	NUMBER	DATE
	PI1802W/X (Rev 2, 01/28/2018)	**October 2018**

PRODUCT IMPROVEMENT CAMPAIGN

SUBJECT: ENGINE REPLACEMENT INSTRUCTIONS FOR DTC P1326 (PI1802W/X)

★ NOTICE

This bulletin has been revised to include additional information. New/revised sections of this bulletin are indicated by a black bar in the margin area.

This bulletin provides information related to the Technical Service Bulletin previously published in July 2018 (PI1802, Rev 5, 12/20/2018) titled "Knock Sensor Detection System - ECU Logic Improvement". Specifically, this bulletin provides instructions on which procedures to follow if, after installation of the KSDS, any one of the subject vehicles below returns to the dealer with Diagnostic Trouble Code ("DTC"), P1326.

Year	Model	Engine	Production Date
2014	Optima (TF)	2.4L GDI	8/29/13 – 4/25/14
2015-2018	Optima (TF/QF/JF/JFa)	2.4L & 2.0L T-GDI	4/16/14 – 7/11/18
2014-2018	Sportage (SL/QL)	2.4L & 2.0L T-GDI	9/30/13 – 4/5/18
2015-2018	Sorento (XMa/UMa)	2.4L & 2.0L T-GDI	1/3/14 – 3/7/18

If DTC P1326 is present, first check for any wiring signal interference following the procedure set forth below before determining whether an engine replacement is necessary. Based on the results of the Wiring Signal Interference Check, dealers are to perform either the Knock Sensor Wiring Repair or the Engine Long-Block Replacement according to the procedures in this TSB.

If the vehicle's engine is already seized or severely knocking, dealers are to perform the Engine Long-Block Replacement **and** the Wiring Signal Interference Check according to the procedures in this TSB.

A Vehicle Diagnosis Number (VDN) must be created with DTC P1326, prior to performing PI1802W/X. If a VDN is not created, Warranty claim submission issues may occur.

Before conducting the procedure, verify the vehicle is included in the list of affected VINs.

★ NOTICE

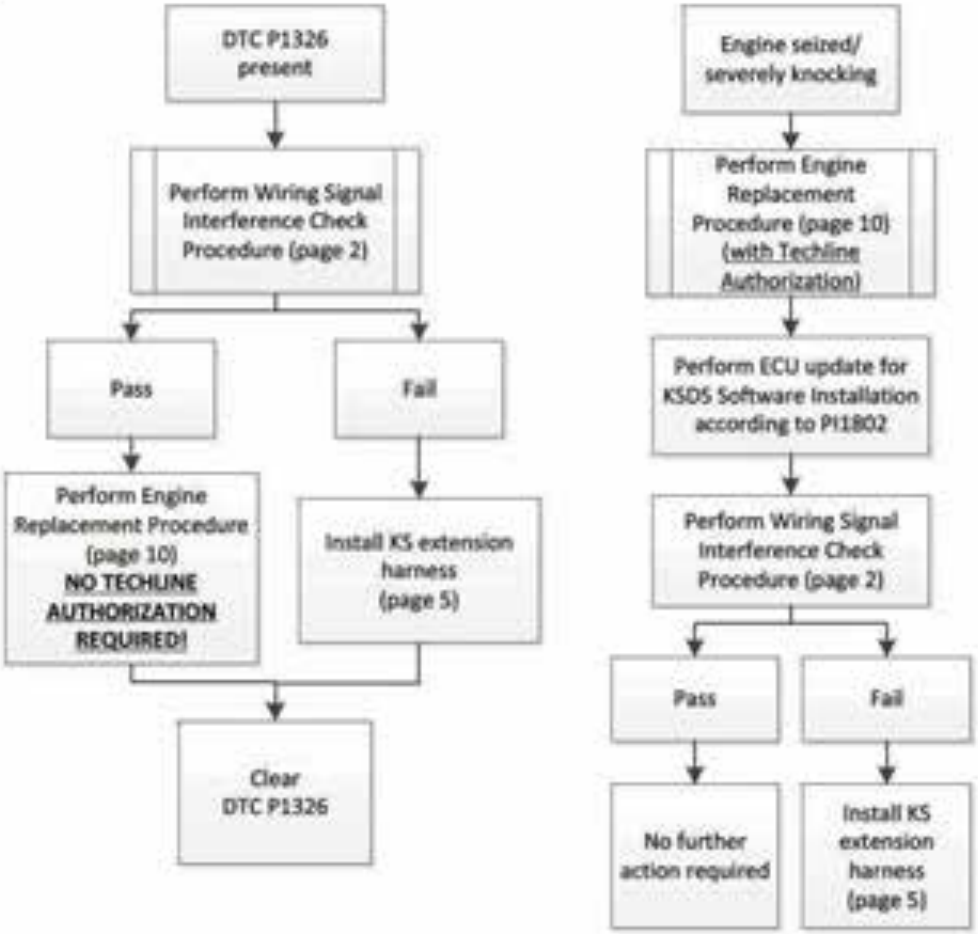
To ensure complete customer satisfaction, always remember to refer to WebDCS Warranty Coverage (validation) Inquiry Screen (Service → Warranty Coverage → Warranty Coverage Inquiry) for a list of any additional campaigns that may need to be performed on the vehicle before returning it to the customer.

File Under: <Product Improvement>

Circulate To: ☒ General Manager ☒ Service Manager ☒ Parts Manager ☒ Service Advisors ☒ Technicians ☒ Body Shop Manager ☐ Fleet Repair

SUBJECT: ENGINE REPLACEMENT INSTRUCTIONS FOR DTC P1326 (PI1802W/X)

Flow Chart:



Wiring Signal Interference Check Procedure:

1. Using the KDS **(connected to the Internet)**, perform a Fault Code Search and confirm DTC P1326 is present.
   - If P1326 is present, proceed to the next step to perform the wiring signal interference check.
   - If the engine is seized or severely knocking, proceed to the engine replacement procedure on page 10.



2. Start/warm up the engine and ensure **ENGINE OIL** is at operating temperature (176°F).



3. From the KDS Home Screen, select S/W Management.



4. Select Engine Control → Wiring Signal Interference Check.



5. Ensure the engine is on and at idle and **ENGINE OIL** temperature is at 176°F degrees or higher. Select OK to proceed.



5b. Select OK to proceed.

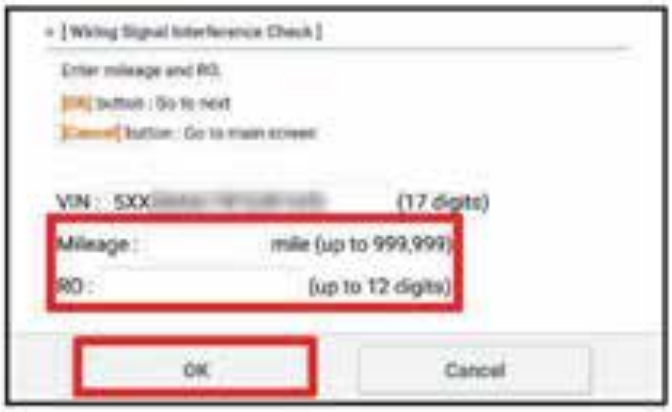
NOTE: This test should only be performed if Knock Sensor Detection System - ECU Logic Improvement (PI1802) has previously been completed.



5c. If the conditions are not met, a pop-up as shown will be displayed.



6. Enter vehicle mileage and RO number (VIN is automatically populated).



7. Wiring Signal Interference Check test will begin and take about three (3) minutes to complete. **NOTE**: Do not push on the accelerator pedal.



- If the result is "OK", turn the engine off and proceed to the Engine Replacement procedure on page 10.



- If the result is "NOT OK", turn the engine off and proceed to **step 2** of the Knock Sensor (KS) Extension Harness Installation procedure on page 5.



KS Extension Harness Installation Procedure:

NOTE: Photos below are from a 15MY Optima (QF). Components and their location may vary in different models.

1. Inspect the ECU harness (A) and verify if the Knock Sensor wiring extension harness (B) has previously been installed.

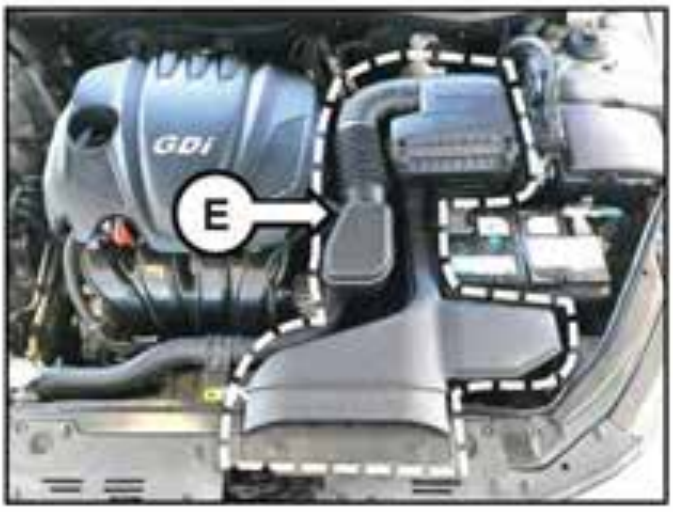
   NOTE: To identify the extension harness (B), look for an external harness (B) which should be cable-tied to the existing wiring harness (A) leading by the intake manifold (C) to the knock sensor (D), as shown.

   - If the extension harness (B) has been installed, open a Techline case online.
   - If the extension harness (B) has not been installed, proceed to the next step.

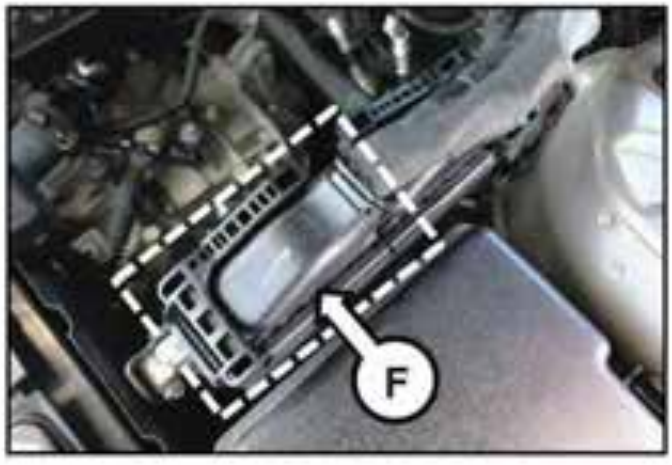




2. Remove the air cleaner and duct assembly (E).



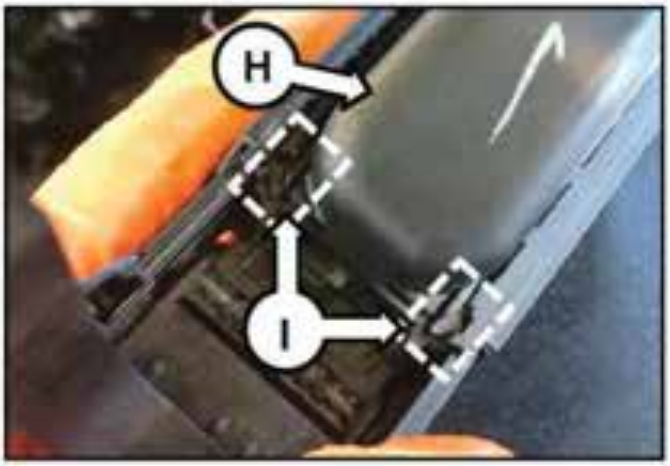
3. Disconnect the ECU connector (F).



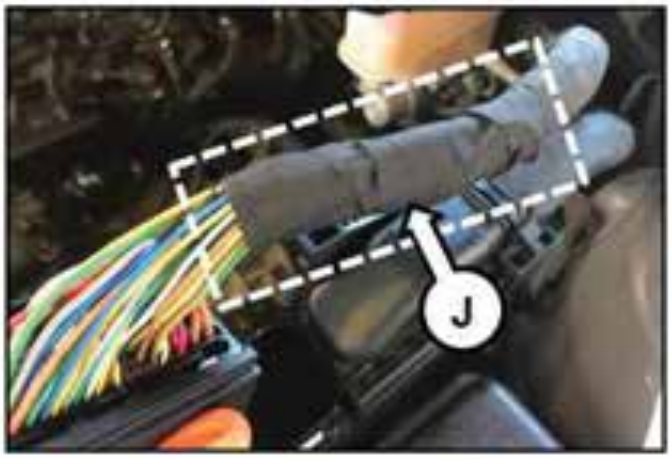
4. Cut the existing cable-tie (G) from the connector.



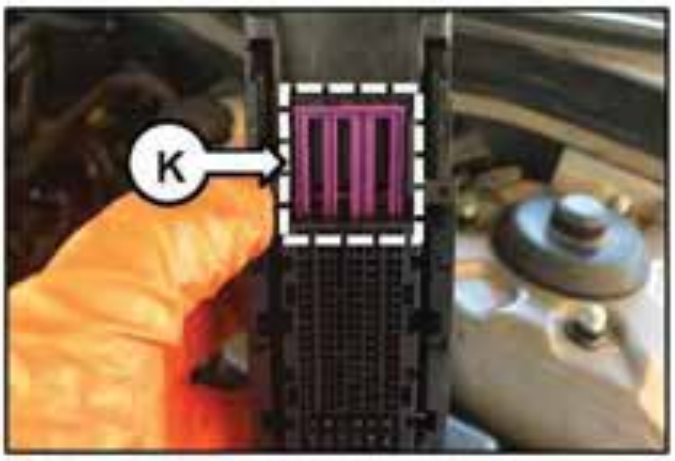
5. Remove the ECU connector cover (H) by carefully unclipping the two (2) tabs (I) and sliding the cover (H) towards the tabs (I).



6. Carefully remove the electrical tape (J) to expose the harness wires.

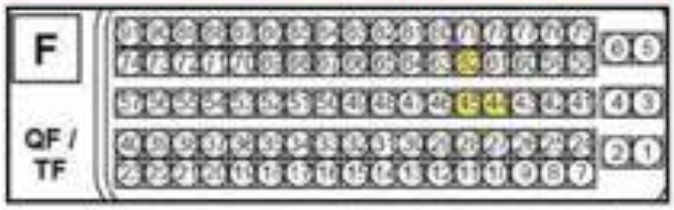


7. Remove the pin retainer (K).



8. Locate the three (3) knock sensor circuit terminals from the ECU connector (F). Refer to the "Schematic Diagrams → Engine Electrical System → Engine Control System → Schematic Diagrams" chapter of the applicable ETM on KGIS.

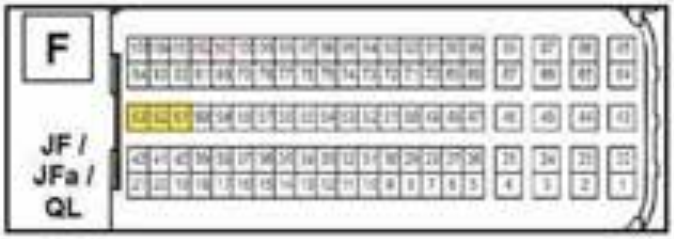
QF, TF, XMa, and SL	
Pin	**Wire**
44	Knock Sensor Shielded Ground
45	Knock Sensor Ground
62	Knock Sensor Interface (Signal)

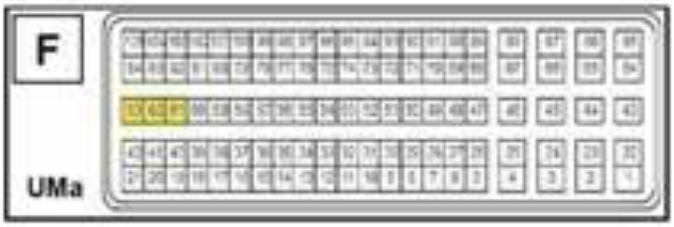




UMa, JF, JFa, and QL	
Pin	**Wire**
61	Knock Sensor Shielded Ground
62	Knock Sensor Ground
63	Knock Sensor Interface (Signal)

Click here to see a video of terminal removal.





9. Remove the three (3) terminals **one at a time** and insert the new terminals of the extension harness into the ECU connector (F). Reinstall pin retainer (K) and reassemble the connector (F).

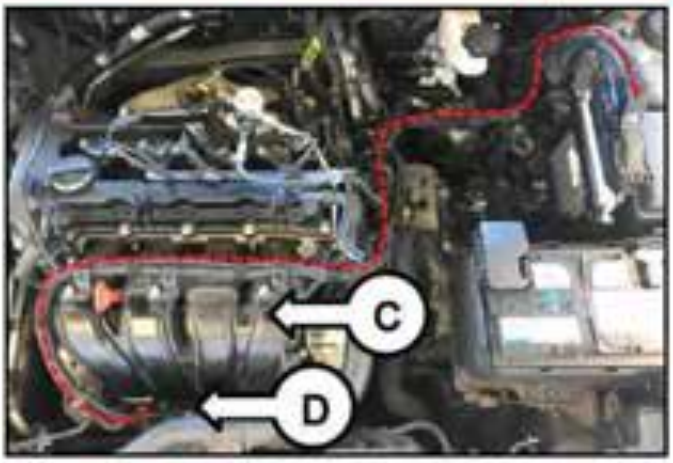


QF, TF, XMa, and SL	
Pin	**Extension Wire Color**
44	Blue
45	Black
62	Red

UMa, JF, JFa, and QL	
Pin	**Extension Wire Color**
61	Blue
62	Black
63	Red

NOTE: Be sure to note the rotational position of the terminals during removal. They are directional and need to be reinstalled in the same "clock" position.

10. Route the extension harness (B) along the existing harness (A) leading by the intake manifold (C) to the knock sensor (D), as shown.



*** IMPORTANT**

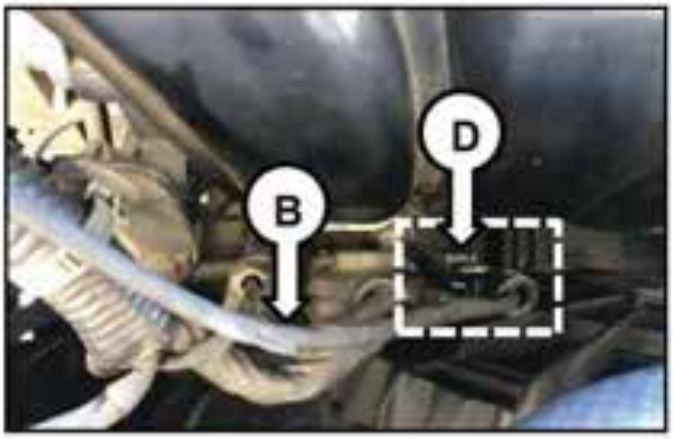
The harness (B) must be routed above and secured to the harness protector (L1) and UNDER the Breather Hose (L2) and Camshaft Position Sensor (L3).





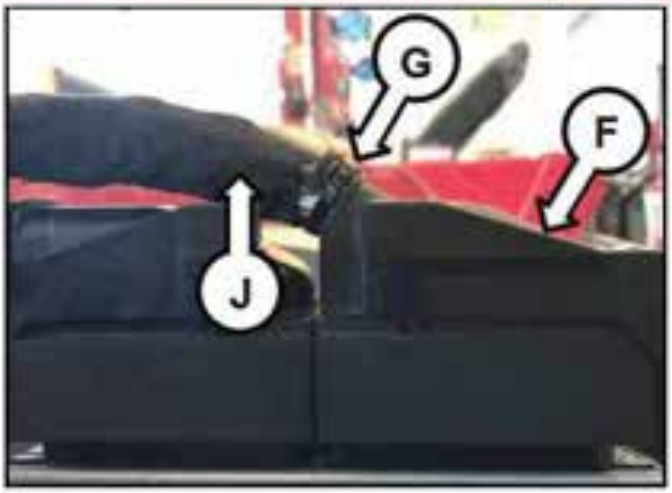


11. Connect the extension harness (B) to the knock sensor (D).

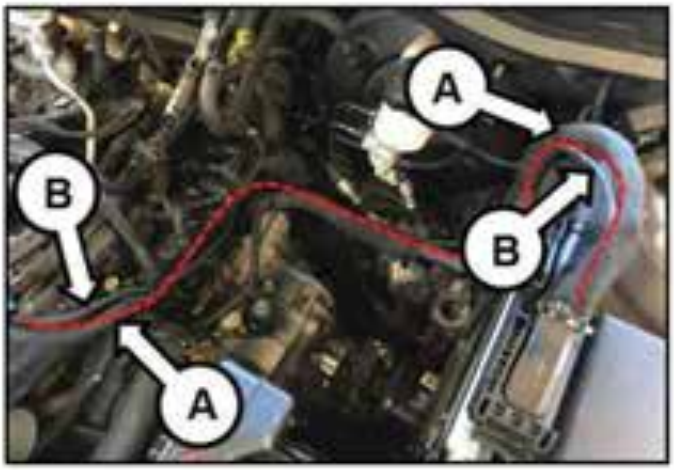


12. Cut off and discard the three (3) old knock sensor circuit terminals and the old knock sensor connector and secure the remaining wires to the new extension harness using the supplied electrical tape. **NOTE**: Complete removal of the old knock sensor wires is not necessary. Only remove the old terminals and connector.

13. Secure the extension harness at the connector (F) by replacing the cable-tie (G) removed in step 4 with a new supplied cable-tie and the electrical tape (J) removed in step 6 with new supplied electrical tape.



14. Secure the extension harness (B) to the existing harness (A) using the supplied cable-ties. Tuck and secure any excess wiring of the extension harness near the ECU with cable-tie.



15. Reinstall all removed components in the reverse order of removal.

16. Erase the P1326 DTC with the KDS and start the engine to confirm proper operation.

Engine Replacement Procedure:

1. Remove the engine assembly by referring to the "Engine And Transmission (Transaxle) Assembly → Engine And Transmission (Transaxle) Assembly → Repair procedures" chapter in the applicable Shop Manual on KGIS.

   Refer to TSB ENG190 for information regarding engine replacement practices.



2. After removal of the engine from the vehicle, remove all components that will need to be transferred by referring to the applicable Shop Manual on KGIS.

3. Place the new engine block on an engine stand.

4. Install all removed components from the old engine block onto the new engine block utilizing all parts from Service Kit I and II. Be advised of notes below.

Notes:

High Pressure Pump & Roller Tappet:

- Refer to TSB ENG083 for special attention and handling procedures of GDI-specific components.
- When installing the high pressure pump and roller tappet onto the new engine, apply engine oil to the roller tappet, and O-rings of the high pressure pump.

Tightening torques of pump bolts:
9.4 – 10.9 lb.ft (12.8 – 14.7 N.m, 1.3 – 1.5 kgf.m)

Tightening torques of pipe flare nut:
19.5 – 23.9 lb.ft (26.5 – 32.4 N.m, 2.7 – 3.3 kgf.m)

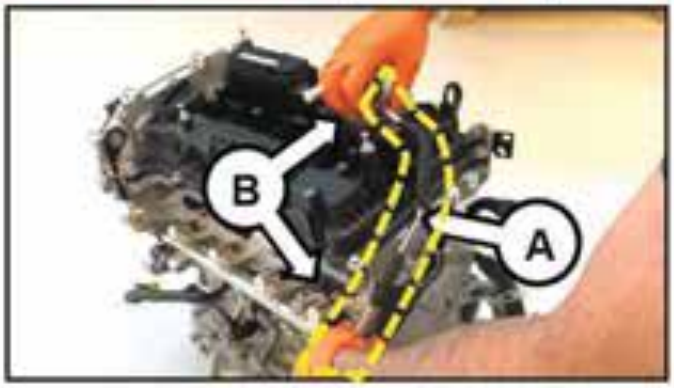


*** NOTICE**

Refer to TSB ENG083 for gasoline direct injection (GDI) specific information, including related warnings and cautions for handling high fuel pressure system components.

High Pressure Fuel Pipe:

1. Properly position the new fuel pipe (A) and then hand-tighten both flare nuts (B).



2. Install the pipe retaining bracket and bolt (C) and torque to specifications.

★ NOTICE

If the bracket and bolt are missing, order and install a new bracket and bolt.

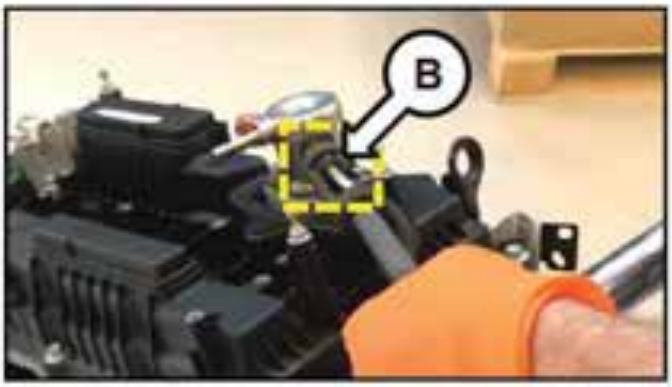
Tightening torque (bracket bolt):
5.8 – 8.7 lb.ft (7.8 –11.8 N.m, 0.8 – 1.2 kgf.m)



3. Using a click-type/electronic torque wrench and SST 09314-3Q100, torque both flare nuts (A) to specifications.

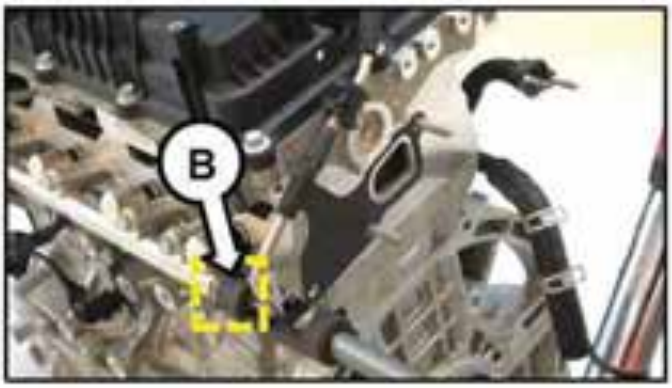
Tightening torque (flare nuts):
19.5 – 23.9 lb.ft (26.5 – 32.4 N.m, 2.7 – 3.3 kgf.m)

Click here to see a video tutorial of high pressure fuel pipe install (includes high pressure pump install).



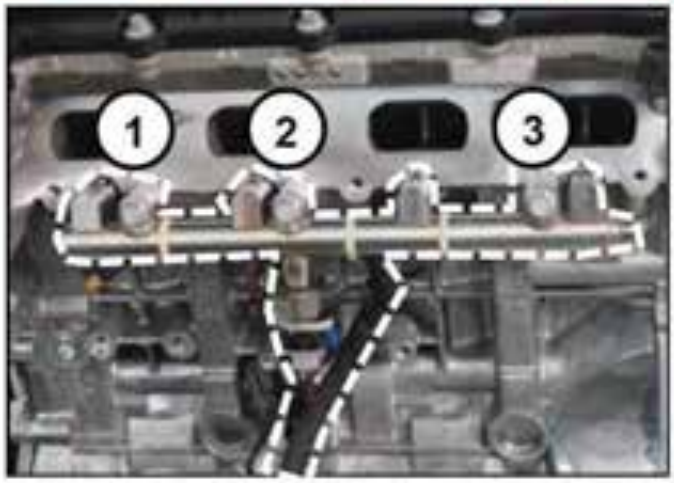
★ IMPORTANT

The high pressure fuel pipe bracket and bolt must be installed and properly torqued prior to torqueing the high pressure fuel pipe flare nuts.



Delivery Pipe:

- Refer to TSB ENG083 for special attention and handling procedures of GDI-specific components.
- Prior to installing the delivery pipe, be sure to replace all of the injector O-rings and injector retainers.
- Prior to installing the delivery pipe, apply engine oil to the injector O-rings.
- When installing the delivery pipe, use caution not to damage the tip of the injector.
- Be sure to replace the delivery pipe retaining bolts and torque them in the sequence shown.



Tightening torque of bolts:
13.7 – 17.4 lb.ft (18.6 – 23.5 N.m, 1.9 – 2.4 kgf.m)

*** NOTICE**

Combustion seals must be compressed after installation and before attempting to install into the cylinder head. Use SST 09353 2B000 (refer to TSB ENG083).

Dipstick Tube & Dipstick:

- Prior to installing the new tube, lubricate the o-ring located at the bottom of the tube with engine oil.
- Install the red dipstick included in Service Kit I.

Tightening torque of bolt:
5.8 – 8.7 lb.ft (7.8 – 11.8 N.m, 0.8 - 1.2 kgf.m)



Intake Manifold:

- Prior to installation, replace the intake manifold gaskets.
- Torque bolts in the sequence shown.

Tightening torque of bolts:
13.7 – 17.4 lb.ft (18.6 – 23.5 N.m, 1.9 – 2.4 kgf.m)

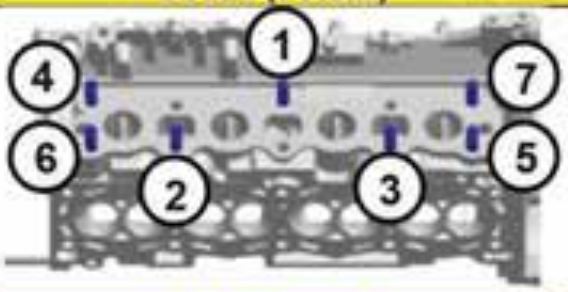


Exhaust Manifold:

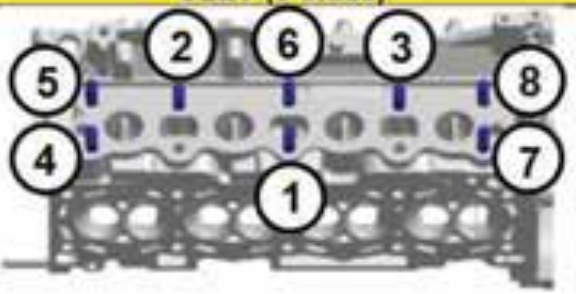
- All engines supplied under this Product Improvement Campaign have the exhaust manifold studs configured for SULEV engines.
- Using the pictures to the right, check the exhaust manifold stud location and quantity. Relocate as required for ULEV engines and obtain one (1) extra from the removed engine.
- Prior to installation, replace the exhaust manifold gasket and front muffler gasket.
- Torque nuts in the sequence shown.

Tightening torque of nuts:
36.2 – 39.7 lb.ft (49.0 – 53.9 N.m, 5.0 – 5.5 kgf.m)

SULEV (7 studs)



ULEV (8 studs)

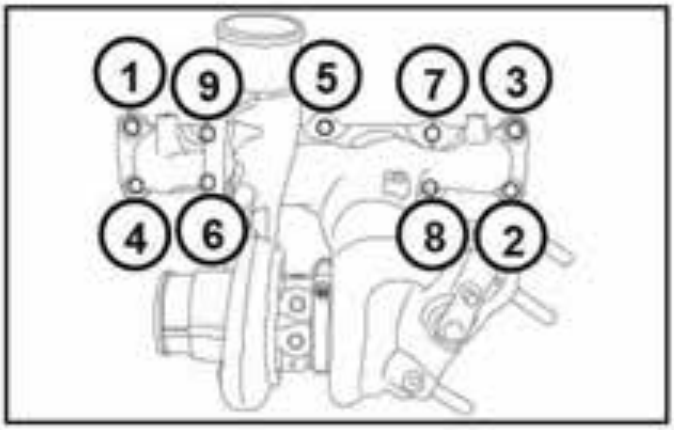


***For 15MY Sorento (XMa) vehicles only: check the underhood emissions label and record whether the label references ULEV or SULEV. This information is needed to select/order the correct replacement engine.**



- On Turbo engines, replace the turbocharger oil feed line and gaskets.

Tightening torque of oil feed line bolt:
8.7 – 13.0 lb.ft (11.8 – 17.7 N.m, 1.2 – 1.8 kgf.m)
Tightening torque of oil feed line nuts:
5.8 – 8.7 lb.ft (7.8 – 11.8 N.m, 0.8 – 1.2 kgf.m)
Tightening torque of oil drain line nuts and bolts:
5.8 – 8.7 lb.ft (7.8 – 11.8 N.m, 0.8 – 1.2 kgf.m)



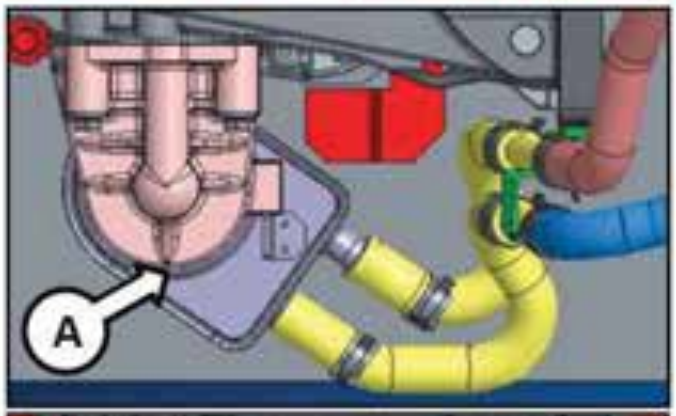
- Torque exhaust manifold nuts in the sequence shown.

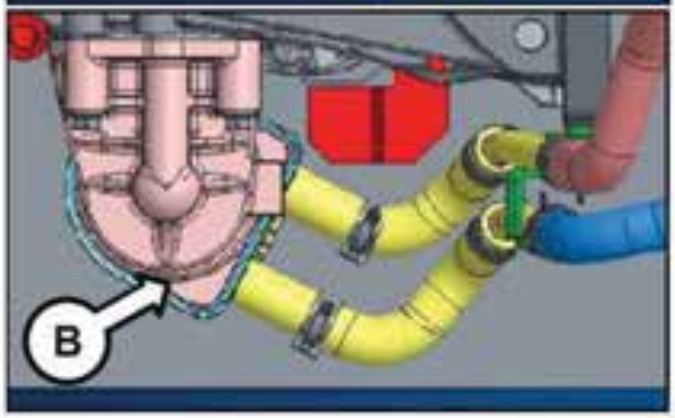
Tightening torque of nuts:
36.2 – 39.7 lb.ft (49.0 – 53.9 N.m, 5.0 – 5.5 kgf.m)

Oil Cooler Tube Assembly:

New engines may be supplied with a different oil cooler. Use steps below to determine the need for a replacement oil cooler tube assembly.

- If the new engine's (bigger) oil cooler (A) does not match the old engine's (smaller) oil cooler (B), replace the oil cooler tube assembly with the improved part. See parts table on page 17.
- If the new engine's (bigger) oil cooler (A) matches the old engine's (bigger) oil cooler (A), reuse the old engine's oil cooler tube assembly.
- If the new engine's (smaller) oil cooler (B) matches the old engine's (smaller) oil cooler (B), reuse the old engine's oil cooler tube assembly.





Drive Plate Bolts:

- Replace all seven (7) drive plate (AT) bolts.

Tightening torque of nuts:
86.8 – 93.9 lb.ft (117.7 – 125.5 N.m, 12.0 – 13.0 kgf.m)



Drive Plate Bolt (A/T)

Torque Converter

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



Not Fully Inserted



Fully Inserted

5. Reinstall the assembled engine and transmission/transaxle into the vehicle.

   Be sure to:

   - Fill crankcase with 5W-30 oil (~5.8 quarts).
   - Fill and bleed the cooling system with 50/50 coolant or mixture appropriate for area.
   - Pressurize the fuel system before starting the vehicle.
   - Reset engine adaptive values and perform steering angle sensor calibration.

   Refer to TSB ENG190 for information regarding engine replacement practices.

6. Verify proper operation of the vehicle with road test, and **erase any stored DTCs** (e.g., EPS, ESC, and TPMS) that may have been set by this procedure. Verify no leaks exist and ensure engine oil and coolant are at their proper level.

   If any DTCs are still active, follow any related diagnosis and repair as needed.

SUBJECT: ENGINE REPLACEMENT INSTRUCTIONS FOR DTC P1326 (PI1802W/X)

AFFECTED VEHICLE RANGE:

Model	Production Date Range
14MY Optima (TF)	August 29, 2013 through April 25, 2014
15-18MY Optima (TF/QF/JF/JFa)	April 16, 2014 through July 11, 2018
14-18MY Sportage (SL/QL)	September 30, 2013 through April 5, 2018
15-18MY Sorento (XMa/UMa)	January 3, 2014 through March 7, 2018

REQUIRED TOOL:

Tool Name	Tool Part No.	Figure	Comments
Torque Wrench Socket	09314 3Q100		Refer to TSB ENG083 for detailed usage instructions
Injector Combustion Seal Ring Installer	09353 2B000		
Pin Tool	91400 00000QQK		Auto-shipped to Dealers in 10/2018. Replacements can be ordered through Mobis Parts America.
Click-Type or Electronic Torque Wrench	N/A		Locally Sourced

REQUIRED PARTS:

Part Name	MY	Model	Part Number		Figure
			2.4L GDI	2.0L T-GDI	
Engine Long Block	14-15	TF	21101 2GK06QQKR	-	
	14-16	SL	21101 2GK36QQKR	21101 2GK37QQKR	
	15	QF	21101 2GK06QQKR	21101 2GK08QQKR	
		XMa ULEV & SULEV	21101 2GK11QQKR	-	
	17-18	QL	*21101 2GK35QQKR	*21101 2GK39QQKR	
	16-17	UMa	*21101 2GK31QQKR	*21101 2GK32QQKR	
	18		*21101 2GK33QQKR		
	16-18	JF, JFa	*21101 2GK34QQKR	*21101 2GK32QQKR	

*Engines not yet available.

Models	Part Name	Engine	Part Number	Figure
TF, SL, QF, XMa	Service Kit I	2.4L GDI	21111 2GK50QQK	
		2.0L T-GDI	21111 2GK60QQK	
UMa, QL, JF, JFa		2.4L GDI	21111 2GK51QQK	-
		2.0L T-GDI	21111 2GK52QQK	-

SUBJECT: ENGINE REPLACEMENT INSTRUCTIONS FOR DTC P1326 (PI1802W/X)

Models	Part Name	Engine	Part Number	Figure
TF, SL, QF, XMa	Service Kit II	2.4L GDI and 2.0L T-GDI	21111 2GK70QQK	
UMa, QL, JF, JFa		2.4L GDI	21111 2GK71QQK	-
		2.0L T-GDI	21111 2GK72QQK	-
TF, SL, QF, XMa	KS Extension Harness	2.4L GDI and 2.0L T-GDI	*91400 2T100QQK	
UMa, QL, JF, JFa			91400 2T010QQK	
All	Drive Plate Bolts	2.4L GDI and 2.0L T-GDI	23311 25050	
	Oil Cooler Tube Assembly **(replacement is conditional, refer to page 14)**	2.4L GDI	25470 2G050QQK	
		2.0L T-GDI	25470 2G650QQK	

***NOTE: Old part number 91400 2T000QQK has been superseded by new part number 91400 2T100QQK.**

SUBJECT: ENGINE REPLACEMENT INSTRUCTIONS FOR DTC P1326 (PI1802W/X)

WARRANTY INFORMATION (PI1802**W1**, MIL ON WITH P1326):

N Code: N99 C Code: C99

Model	Claim Type	Causal P/N	Qty.	Repair Description	Labor Op Code	Op Time	Replacement P/N	Qty.
Scr. (XMa) 2.4L	R	21020 2G010	0	(PI1802**W1**) 2.4L GDI 2WD MIL ON with P1326, KSDS Wire Harness Inspection Pass, & Engine Replacement	180A12R0	8.4 M/H	21111 2GK50QQKR	1
							21111 2GK70QQKR	1
							23311 25050	7
							(ULEV or SULEV) 21101 2GK11QQKRR	1
				(PI1802**W1**) 2.4L GDI 2WD MIL ON with P1326, KSDS Wire Harness Inspection Fail, KSDS Extension Harness Install	180A12R2	0.8 M/H	*91400 2T100QQK	1
				(PI1802**W1**) 2.4L GDI AWD MIL ON with P1326, KSDS Wire Harness Inspection Pass, & Engine Replacement	180A12R1	8.6 M/H	21111 2GK50QQK	1
							21111 2GK70QQK	1
							23311 25050	7
							(ULEV or SULEV) 21101 2GK11QQKR	1
				(PI1802**W1**) 2.4L GDI AWD MIL ON with P1326, KSDS Wire Harness Inspection Fail, KSDS Extension Harness Install	180A12R3	0.8 M/H	*91400 2T100QQK	1
Opt. (QF) 2.4L	R	23060 2G400	0	(PI1802**W1**) 2.4L GDI MIL ON with P1326, KSDS Wire Harness Inspection Pass, & Engine Replacement	180A16R1	8.4 M/H	21111 2GK50QQK	1
							21111 2GK70QQK	1
							23311 25050	7
							21101 2GK06QQKR	1
				(PI1802**W1**) 2.4L GDI MIL ON with P1326, KSDS Wire Harness Inspection Fail, KSDS Extension Harness Install	180A16R3	0.8 M/H	*91400 2T100QQK	1
Opt. (QF) 2.0L T	R	23060 2G400	0	(PI1802**W1**) 2.0L T-GDI MIL ON with P1326, KSDS Wire Harness Inspection Pass, & Engine Replacement	180A16R0	8.6 M/H	21111 2GK60QQK	1
							21111 2GK70QQK	1
							23311 25050	7
							21101 2GK06QQKR	1
				(PI1802**W1**) 2.0L T-GDI MIL ON with P1326, KSDS Wire Harness Inspection Fail, KSDS Extension Harness Install	180A16R2	0.8 M/H	*91400 2T100QQK	1
Opt. (TF) 2.4L	R	23060 2G400	0	(PI1802**W1**) 2.4L GDI MIL ON with P1326, KSDS Wire Harness Inspection Pass, & Engine Replacement	180111R0	8.4 M/H	21111 2GK50QQK	1
							21111 2GK70QQK	1
							23311 25050	7
							21101 2GK06QQKR	1
				(PI1802**W1**) 2.4L GDI MIL ON with P1326, KSDS Wire Harness Inspection Fail, KSDS Extension Harness Install	180111R5	0.8 M/H	*91400 2T100QQK	1

***NOTE: Old part number 91400 2T000QQK has been superseded by new part number 91400 2T100QQK.**

SUBJECT: ENGINE REPLACEMENT INSTRUCTIONS FOR DTC P1326 (PI1802W/X)

Model	Claim Type	Causal P/N	Qty.	Repair Description	Labor Op Code	Op Time	Replacement P/N	Qty.
Spo. (SL) 2.4L	R	23060 2G400	0	(PI1802W1) 2.4L GDI 2WD MIL ON with P1326, KSDS Wire Harness Inspection Pass, & Engine Replacement	180112R0	7.7 M/H	21111 2GK50QQK	1
							21111 2GK70QQK	1
							23311 25050	7
							21101 2GK36QQKR	1
				(PI1802W1) 2.4L GDI 2WD MIL ON with P1326, KSDS Wire Harness Inspection Fail, KSDS Extension Harness Install	180112R5	0.9 M/H	*91400 2T100QQK	1
				(PI1802W1) 2.4L GDI AWD MIL ON with P1326, KSDS Wire Harness Inspection Pass, & Engine Replacement	180112R2	8.1 M/H	21111 2GK50QQK	1
							21111 2GK70QQK	1
							23311 25050	7
							21101 2GK36QQKR	1
				(PI1802W1) 2.4L GDI AWD MIL ON with P1326, KSDS Wire Harness Inspection Fail, KSDS Extension Harness Install	180112R7	0.9 M/H	*91400 2T100QQK	1
Spo. (SL) 2.0L T	R	23060 2G400	0	(PI1802W1) 2.0L T-GDI 2WD MIL ON with P1326, KSDS Wire Harness Inspection Pass, & Engine Replacement	180112R3	7.7 M/H	21111 2GK60QQK	1
							21111 2GK70QQK	1
							23311 25050	7
							21101 2GK37QQKR	1
				(PI1802W1) 2.0L T-GDI 2WD MIL ON with P1326, KSDS Wire Harness Inspection Fail, KSDS Extension Harness Install	180112R8	0.9 M/H	*91400 2T100QQK	1
				(PI1802W1) 2.0L T-GDI AWD MIL ON with P1326, KSDS Wire Harness Inspection Pass, & Engine Replacement	180112R4	8.1 M/H	21111 2GK60QQK	1
							21111 2GK70QQK	1
							23311 25050	7
							21101 2GK37QQKR	1
				(PI1802W1) 2.0L T-GDI AWD MIL ON with P1326, KSDS Wire Harness Inspection Fail, KSDS Extension Harness Install	180112R9	0.9 M/H	*91400 2T100QQK	1

***NOTE: Old part number 91400 2T000QQK has been superseded by new part number 91400 2T100QQK.**

SUBJECT: ENGINE REPLACEMENT INSTRUCTIONS FOR DTC P1326 (PI1802W/X)

Model	Claim Type	Causal P/N	Qty.	Repair Description	Labor Op Code	Op Time	Replacement P/N	Qty.
Sor. (UMa) 2.4L	R	23060 2G401	0	(PI1802W1) 2.4L GDI 2WD MIL ON with P1326, KSDS Wire Harness Inspection Pass, & Engine Replacement	180A32R0	8.4 M/H	21111 2GK51QQK	1
							21111 2GK71QQK	1
							23311 25050	7
							(16-17MY) *21101 2GK31QQKR	1
							(18MY) *21101 2GK33QQKR	
				(PI1802W1) 2.4L GDI 2WD MIL ON with P1326, KSDS Wire Harness Inspection Fail, KSDS Extension Harness Install	180A32R4	0.8 M/H	91400 2T010QQK	1
				(PI1802W1) 2.4L GDI AWD MIL ON with P1326, KSDS Wire Harness Inspection Pass, & Engine Replacement	180A32R1	8.7 M/H	21111 2GK51QQK	1
							21111 2GK71QQK	1
							23311 25050	7
							(16-17MY) *21101 2GK31QQKR	1
							(18MY) *21101 2GK33QQKR	
				(PI1802W1) 2.4L GDI AWD MIL ON with P1326, KSDS Wire Harness Inspection Fail, KSDS Extension Harness Install	180A32R5	0.8 M/H	91400 2T010QQK	1
Sor. (UMa) 2.0L T	R	23060 2G401	0	(PI1802W1) 2.0L T-GDI 2WD MIL ON with P1326, KSDS Wire Harness Inspection Pass, & Engine Replacement	180A32R2	8.4 M/H	21111 2GK52QQK	1
							21111 2GK72QQK	1
							23311 25050	7
							*21101 2GK32QQKR	1
				(PI1802W1) 2.0L T-GDI 2WD MIL ON with P1326, KSDS Wire Harness Inspection Fail, KSDS Extension Harness Install	180A32R6	0.8 M/H	91400 2T010QQK	1
				(PI1802W1) 2.0L T-GDI AWD MIL ON with P1326, KSDS Wire Harness Inspection Pass, & Engine Replacement	180A32R3	8.7 M/H	21111 2GK52QQK	1
							21111 2GK72QQK	1
							23311 25050	7
							*21101 2GK32QQKR	1
				(PI1802W1) 2.0L T-GDI AWD MIL ON with P1326, KSDS Wire Harness Inspection Fail, KSDS Extension Harness Install	180A32R7	0.8 M/H	91400 2T010QQK	1

*Engines not yet available.

SUBJECT: ENGINE REPLACEMENT INSTRUCTIONS FOR DTC P1326 (PI1802W/X)

Model	Claim Type	Causal P/N	Qty.	Repair Description	Labor Op Code	Op Time	Replacement P/N	Qty.
Spo. (QL) 2.4L	R	23060 2G401	0	(PI1802W1) 2.4L GDI 2WD MIL ON with P1326, KSDS Wire Harness Inspection Pass, & Engine Replacement	180114R0	8.4 M/H	21111 2GK51QQK	1
							21111 2GK71QQK	1
							23311 25050	7
							*21101 2GK35QQKR	1
				(PI1802W1) 2.4L GDI 2WD MIL ON with P1326, KSDS Wire Harness Inspection Fail, KSDS Extension Harness Install	180114R5	0.8 M/H	91400 2T010QQK	1
				(PI1802W1) 2.4L GDI AWD MIL ON with P1326, KSDS Wire Harness Inspection Pass, & Engine Replacement	180114R2	8.7 M/H	21111 2GK51QQK	1
							21111 2GK71QQK	1
							23311 25050	7
							*21101 2GK35QQKR	1
				(PI1802W1) 2.4L GDI AWD MIL ON with P1326, KSDS Wire Harness Inspection Fail, KSDS Extension Harness Install	180114R7	0.8 M/H	91400 2T010QQK	1
Spo. (QL) 2.0L T	R	23060 2G401	0	(PI1802W1) 2.0L T-GDI 2WD MIL ON with P1326, KSDS Wire Harness Inspection Pass, & Engine Replacement	180114R3	8.4 M/H	21111 2GK52QQK	1
							21111 2GK72QQK	1
							23311 25050	7
							*21101 2GK39QQKR	1
				(PI1802W1) 2.0L T-GDI 2WD MIL ON with P1326, KSDS Wire Harness Inspection Fail, KSDS Extension Harness Install	180114R8	0.8 M/H	91400 2T010QQK	1
				(PI1802W1) 2.0L T-GDI AWD MIL ON with P1326, KSDS Wire Harness Inspection Pass, & Engine Replacement	180114R4	8.7 M/H	21111 2GK52QQK	1
							21111 2GK72QQK	1
							23311 25050	7
							*21101 2GK39QQKR	1
				(PI1802W1) 2.0L T-GDI AWD MIL ON with P1326, KSDS Wire Harness Inspection Fail, KSDS Extension Harness Install	180114R9	0.8 M/H	91400 2T010QQK	1

*Engines not yet available.

SUBJECT: ENGINE REPLACEMENT INSTRUCTIONS FOR DTC P1326 (PI1802W/X)

Model	Claim Type	Causal P/N	Qty.	Repair Description	Labor Op Code	Op Time	Replacement P/N	Qty.
Opt. (JF) 2.4L	R	23060 2G401	0	(PI1802W1) 2.4L GDI MIL ON with P1326, KSDS Wire Harness Inspection Pass, & Engine Replacement	160113R0	8.4 M/H	21111 2GK51QGK	1
							21111 2GK71QGK	1
							23311 25050	7
							*21101 2GK34QGKR	1
				(PI1802W1) 2.4L GDI MIL ON with P1326, KSDS Wire Harness Inspection Fail, KSDS Extension Harness Install	160113R5	0.8 M/H	91400 2T010QGK	1
Opt. (JFa) 2.4L	R	23060 2G401	0	(PI1802W1) 2.4L GDI MIL ON with P1326, KSDS Wire Harness Inspection Pass, & Engine Replacement	180A33R0	8.4 M/H	21111 2GK51QGK	1
							21111 2GK71QGK	1
							23311 25050	7
							*21101 2GK34QGKR	1
				(PI1802W1) 2.4L GDI MIL ON with P1326, KSDS Wire Harness Inspection Fail, KSDS Extension Harness Install	180A33R2	0.8 M/H	91400 2T010QGK	1
Opt. (JFa) 2.0L T	R	23060 2G401	0	(PI1802W1) 2.0L T-GDI MIL ON with P1326, KSDS Wire Harness Inspection Pass, & Engine Replacement	180A33R1	8.4 M/H	21111 2GK52QGK	1
							21111 2GK72QGK	1
							23311 25050	7
							*21101 2GK32QGKR	1
				(PI1802W1) 2.0L T-GDI MIL ON with P1326, KSDS Wire Harness Inspection Fail, KSDS Extension Harness Install	180A33R3	0.8 M/H	91400 2T010QGK	1

*Engines not yet available.

SUBJECT: ENGINE REPLACEMENT INSTRUCTIONS FOR DTC P1326 (PI1802W/X)

WARRANTY INFORMATION (PI1802**X1**, ENGINE SEIZED/SEVERE KNOCKING):

N Code: N99 C Code: C99

Model	Claim Type	Causal P/N	Qty.	Repair Description	Labor Op Code	Op Time	Replacement P/N	Qty.
Sor. (XMa) 2.4L	R	21020 2G010	0	(PI1802**X1**) 2.4L GDI 2WD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Pass	180A12R8	8.4 M/H	21111 2GK50QQK	1
							21111 2GK70QQK	1
							23311 25050	7
							(ULEV or SULEV) 21101 2GK11QQKR	1
				(PI1802**X1**) 2.4L GDI 2WD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Fail, KSDS Wire Harness Install	180A12RA	8.9 M/H	21111 2GK50QQK	1
							21111 2GK70QQK	1
							23311 25050	7
							(ULEV or SULEV) 21101 2GK11QQKR	1
							*91400 2T100QQK	1
				(PI1802**X1**) 2.4L GDI AWD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Pass	180A12R9	8.6 M/H	21111 2GK50QQK	1
							21111 2GK70QQK	1
							23311 25050	7
							(ULEV or SULEV) 21101 2GK11QQKR	1
				(PI1802**X1**) 2.4L GDI AWD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Fail, KSDS Wire Harness Install	180A12RB	9.1 M/H	21111 2GK50QQK	1
							21111 2GK70QQK	1
							23311 25050	7
							(ULEV or SULEV) 21101 2GK11QQKR	1
							*91400 2T100QQK	1

***NOTE: Old part number 91400 2T000QQK has been superseded by new part number 91400 2T100QQK.**

SUBJECT: ENGINE REPLACEMENT INSTRUCTIONS FOR DTC P1326 (PI1802W/X)

Model	Claim Type	Causal P/N	Qty.	Repair Description	Labor Op Code	Op Time	Replacement P/N	Qty.
Opt. (QF) 2.4L	R	23060 2G400	0	(PI1802**X1**) 2.4L GDI Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Pass	180A16R9	8.4 M/H	21111 2GK50QGK	1
							21111 2GK70QGK	1
							23311 25050	7
							21101 2GK06QGKR	1
				(PI1802**X1**) 2.4L GDI Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Fail, KSDS Wire Harness Install	180A16RB	8.9 M/H	21111 2GK50QGK	1
							21111 2GK70QGK	1
							23311 25050	7
							21101 2GK06QGKR	1
							*91400 2T100QGK	1
Opt. (QF) 2.0L T	R	23060 2G400	0	(PI1802**X1**) 2.0L T-GDI Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Pass	180A16R8	8.7 M/H	21111 2GK60QGK	1
							21111 2GK70QGK	1
							23311 25050	7
							21101 2GK06QGKR	1
				(PI1802**X1**) 2.0L T-GDI Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Fail, KSDS Wire Harness Install	180A16RA	9.2 M/H	21111 2GK60QGK	1
							21111 2GK70QGK	1
							23311 25050	7
							21101 2GK06QGKR	1
							*91400 2T100QGK	1
Opt. (TF) 2.4L	R	23060 2G400	0	(PI1802**X1**) 2.4L GDI Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Pass	18D111RA	8.4 M/H	21111 2GK50QGK	1
							21111 2GK70QGK	1
							23311 25050	7
							21101 2GK06QGKR	1
				(PI1802**X1**) 2.4L GDI Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Fail, KSDS Wire Harness Install	18D111RF	8.9 M/H	21111 2GK50QGK	1
							21111 2GK70QGK	1
							23311 25050	7
							21101 2GK06QGKR	1
							*91400 2T100QGK	1

***NOTE: Part number 91400 2T000QGK has been superseded by a new part number 91400 2T100QGK.**

SUBJECT: ENGINE REPLACEMENT INSTRUCTIONS FOR DTC P1326 (PI1802W/X)

Model	Claim Type	Causal P/N	Qty.	Repair Description	Labor Op Code	Op Time	Replacement P/N	Qty.
Spo. (SL) 2.4L	R	23060 2G400	0	(PI1802X1) 2.4L GDI 2WD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Pass	180112RA	7.7 M/H	21111 2GK50QGK	1
							21111 2GK70QGK	1
							23311 25050	7
							21101 2GK36QGKR	1
				(PI1802X1) 2.4L GDI 2WD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Fail, KSDS Wire Harness Install	180112RF	8.3 M/H	21111 2GK50QGK	1
							21111 2GK70QGK	1
							23311 25050	7
							21101 2GK36QGKR	1
							*91400 2T100QGK	1
				(PI1802X1) 2.4L GDI AWD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Pass	180112RC	8.1 M/H	21111 2GK50QGK	1
							21111 2GK70QGK	1
							23311 25050	7
							21101 2GK36QGKR	1
				(PI1802X1) 2.4L GDI AWD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Fail, KSDS Wire Harness Install	180112RH	8.7 M/H	21111 2GK50QGK	1
							21111 2GK70QGK	1
							23311 25050	7
							21101 2GK36QGKR	1
							*91400 2T100QGK	1
Spo. (SL) 2.0L T	R	23060 2G400	0	(PI1802X1) 2.0L T-GDI 2WD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Pass	180112RD	7.7 M/H	21111 2GK60QGK	1
							21111 2GK70QGK	1
							23311 25050	7
							21101 2GK37QGKR	1
				(PI1802X1) 2.0L T-GDI 2WD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Fail, KSDS Wire Harness Install	180112RI	8.3 M/H	21111 2GK60QGK	1
							21111 2GK70QGK	1
							23311 25050	7
							21101 2GK37QGKR	1
							*91400 2T100QGK	1
				(PI1802X1) 2.0L T-GDI AWD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Pass	180112RE	8.1 M/H	21111 2GK60QGK	1
							21111 2GK70QGK	1
							23311 25050	7
							21101 2GK37QGKR	1
				(PI1802X1) 2.0L T-GDI AWD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Fail, KSDS Wire Harness Install	180112RJ	8.7 M/H	21111 2GK60QGK	1
							21111 2GK70QGK	1
							23311 25050	7
							21101 2GK37QGKR	1
							*91400 2T100QGK	1

***NOTE: Old part number 91400 2T000QGK has been superseded by new part number 91400 2T100QGK.**

SUBJECT: ENGINE REPLACEMENT INSTRUCTIONS FOR DTC P1326 (PI1802W/X)

Model	Claim Type	Causal P/N	Qty.	Repair Description	Labor Op Code	Op Time	Replacement P/N	Qty.
Sor. (UMa) 2.4L	R	23060 2G401	0	(PI1802X1) 2.4L GDI 2WD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Pass	180A32RA	8.4 M/H	21111 2GK51QGK	1
							21111 2GK71QGK	1
							23311 25050	7
							(16-17MY) *21101 2GK31QGKR	1
							(18MY) *21101 2GK33QGKR	
				(PI1802X1) 2.4L GDI 2WD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Fail, KSDS Wire Harness Install	180A32RB	8.9 M/H	21111 2GK51QGK	1
							21111 2GK71QGK	1
							23311 25050	7
							(16-17MY) *21101 2GK31QGKR	1
							(18MY) *21101 2GK33QGKR	
							91400 2T010QGK	1
				(PI1802X1) 2.4L GDI AWD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Pass	180A32RE	8.7 M/H	21111 2GK51QGK	1
							21111 2GK71QGK	1
							23311 25050	7
							(16-17MY) *21101 2GK31QGKR	1
							(18MY) *21101 2GK33QGKR	
				(PI1802X1) 2.4L GDI AWD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Fail, KSDS Wire Harness Install	180A32RF	9.2 M/H	21111 2GK51QGK	1
							21111 2GK71QGK	1
							23311 25050	7
							(16-17MY) *21101 2GK31QGKR	1
							(18MY) *21101 2GK33QGKR	
							91400 2T010QGK	1
Sor. (UMa) 2.0L T	R	23060 2G401	0	(PI1802X1) 2.0L T-GDI 2WD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Pass	180A32RC	8.4 M/H	21111 2GK52QGK	1
							21111 2GK72QGK	1
							23311 25050	7
							*21101 2GK32QGKR	1
				(PI1802X1) 2.0L T-GDI 2WD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Fail, KSDS Wire Harness Install	180A32RD	8.9 M/H	21111 2GK52QGK	1
							21111 2GK72QGK	1
							23311 25050	7
							*21101 2GK32QGKR	1
							91400 2T010QGK	1
				(PI1802X1) 2.0L T-GDI AWD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Pass	180A32RG	8.7 M/H	21111 2GK52QGK	1
							21111 2GK72QGK	1
							23311 25050	7
							*21101 2GK32QGKR	1
				(PI1802X1) 2.0L T-GDI AWD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Fail, KSDS Wire Harness Install	180A32H	9.2 M/H	21111 2GK52QGK	1
							21111 2GK72QGK	1
							23311 25050	7
							*21101 2GK32QGKR	1
							91400 2T010QGK	1

*Engines not yet available.

SUBJECT: ENGINE REPLACEMENT INSTRUCTIONS FOR DTC P1326 (PI1802W/X)

Model	Claim Type	Causal P/N	Qty.	Repair Description	Labor Op Code	Op Time	Replacement P/N	Qty.
Spo. (QL) 2.4L	R	23060 2G401	0	(PI1802X1) 2.4L GDI 2WD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Pass	180114RA	8.4 M/H	21111 2GK51QGK	1
							21111 2GK71QGK	1
							23311 25050	7
							*21101 2GK35QGKR	1
				(PI1802X1) 2.4L GDI 2WD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Fail, KSDS Wire Harness Install	180114RF	8.9 M/H	21111 2GK51QGK	1
							21111 2GK71QGK	1
							23311 25050	7
							*21101 2GK35QGKR	1
							91400 2T010QGK	1
				(PI1802X1) 2.4L GDI AWD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Pass	180114RC	8.7 M/H	21111 2GK51QGK	1
							21111 2GK71QGK	1
							23311 25050	7
							*21101 2GK35QGKR	1
				(PI1802X1) 2.4L GDI AWD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Fail, KSDS Wire Harness Install	180114RH	9.2 M/H	21111 2GK51QGK	1
							21111 2GK71QGK	1
							23311 25050	7
							*21101 2GK35QGKR	1
							91400 2T010QGK	1
Spo. (QL) 2.0L T	R	23060 2G401	0	(PI1802X1) 2.0L T-GDI 2WD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Pass	180114RD	8.4 M/H	21111 2GK52QGK	1
							21111 2GK72QGK	1
							23311 25050	7
							*21101 2GK39QGKR	1
				(PI1802X1) 2.0L T-GDI 2WD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Fail, KSDS Wire Harness Install	180114RI	8.9 M/H	21111 2GK52QGK	1
							21111 2GK72QGK	1
							23311 25050	7
							*21101 2GK39QGKR	1
							91400 2T010QGK	1
				(PI1802X1) 2.0L T-GDI AWD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Pass	180114RE	8.7 M/H	21111 2GK52QGK	1
							21111 2GK72QGK	1
							23311 25050	7
							*21101 2GK39QGKR	1
				(PI1802X1) 2.0L T-GDI AWD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Fail, KSDS Wire Harness Install	180114RJ	9.2 M/H	21111 2GK52QGK	1
							21111 2GK72QGK	1
							23311 25050	7
							*21101 2GK39QGKR	1
							91400 2T010QGK	1

*Engines not yet available.

SUBJECT: ENGINE REPLACEMENT INSTRUCTIONS FOR DTC P1326 (PI1802W/X)

Model	Claim Type	Causal P/N	Qty.	Repair Description	Labor Op Code	Op Time	Replacement P/N	Qty.
Opt. (JF) 2.4L	R	23060 2G401	0	(PI1802X1) 2.4L GDI Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Pass	180113RA	8.4 M/H	21111 2GK51QGK	1
							21111 2GK71QGK	1
							23311 25050	7
							*21101 2GK34QGKR	1
				(PI1802X1) 2.4L GDI Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Fail, KSDS Wire Harness Install	180113RF	8.9 M/H	21111 2GK51QGK	1
							21111 2GK71QGK	1
							23311 25050	7
							*21101 2GK34QGKR	1
							91400 2T010QGK	1
Opt. (JFa) 2.4L	R	23060 2G401	0	(PI1802X1) 2.4L GDI Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Pass	180A33RA	8.4 M/H	21111 2GK51QGK	1
							21111 2GK71QGK	1
							23311 25050	7
							*21101 2GK34QGKR	1
				(PI1802X1) 2.4L GDI Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Fail, KSDS Wire Harness Install	180A33RB	8.9 M/H	21111 2GK51QGK	1
							21111 2GK71QGK	1
							23311 25050	7
							*21101 2GK34QGKR	1
							91400 2T010QGK	1
Opt. (JFa) 2.0L T	R	23060 2G401	0	(PI1802X1) 2.0L T-GDI Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Pass	180A33RC	8.7 M/H	21111 2GK52QGK	1
							21111 2GK72QGK	1
							23311 25050	7
							*21101 2GK32QGKR	1
				(PI1802X1) 2.0L T-GDI Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Fail, KSDS Wire Harness Install	180A33RD	9.2 M/H	21111 2GK52QGK	1
							21111 2GK72QGK	1
							23311 25050	7
							*21101 2GK32QGKR	1
							91400 2T010QGK	1

NOTE: Refer to Warranty Bulletin 2018-10 for details regarding coolant and substitute transportation reimbursement requirements.

Old part number 91400 2T000QGK has been superseded by new part number 91400 2T100QGK. See Parts Bulletin 91-914 0003 for details.

***Engines not yet available.**

Use sublet code 'X3' with a maximum allowed amount of $19.80 for "ENGINE R&R" engine oil reimbursement.

If the replacement of the Oil Cooler Tube Assembly was required, please manually enter the applicable Oil Cooler Tube Assembly part number to the claim's related parts section.

Dispose of old parts in accordance with local, state, and Federal regulations.

★ NOTICE

VIN inquiry data for this repair is provided for tracking purposes only. Kia retailers should reference PI1802W/X* when accessing the WebDCS system.

Appendix 1 (Warranty Claim Authorization)

	Scenario	Description	Action Required
1	Campaign - TSB # PI1802W/X Case for Warranty Authorization **NO INSPECTION**	Wiring Signal Interference Check cannot be completed due to engine seizure or other engine failure (won't run long enough to complete the test)	**TL PWA required for all dealers – Video of condition and WRTY143 form required*** Video requirement examples below are for illustration purposes, individual requirements will vary based upon the condition reported: • Video should be continuous and show the VIN (most convenient VIN plate) and pan to show the engine condition • For engine seizures, attempt to turn over engine with breaker bar in video • For hole in engine block, show hole in video

Appendix 2 (Video Capture & Upload)

Capturing a video is often helpful in assisting the Kia Techline Agent in determining a proper diagnosis strategy. Once a TechLine case is open, the following procedure will guide you through the video capture and upload.

The Chrome™ browser should be used to access the Techline portal. Follow the steps below to clear the default browser if it is other than Chrome™.

For KDS Tab 10.1 Tablets:

1. Select "Settings" from the App Screen.
2. Select the "General" tab at the top.
3. Select "Default Applications".
4. If "Internet" is the default browser, select the CLEAR button.

   If "Chrome" is the default browser, further action is not required.



5. When opening the Techline portal, select "Chrome" and select Always".



For KDS Tab S2 Tablets:

1. Select "Settings" from the App Screen.
2. Select "Applications".
3. Select "Default Applications".



4. Select "Browser app".



5. Ensure "Chrome" is selected.



Setting Your Video Size to "Limit to Email"

1. Select "Camera" from the App Screen.



2. Select the Settings icon.



3. Select the Video Camera icon.



4. Ensure "Limit to email" is selected.



Attaching Video to a Techline Case

1. Open K-Support in the device Chrome™ browser or select the "Techline" button on KDS home page.

   https://ksupport.kiausa.com



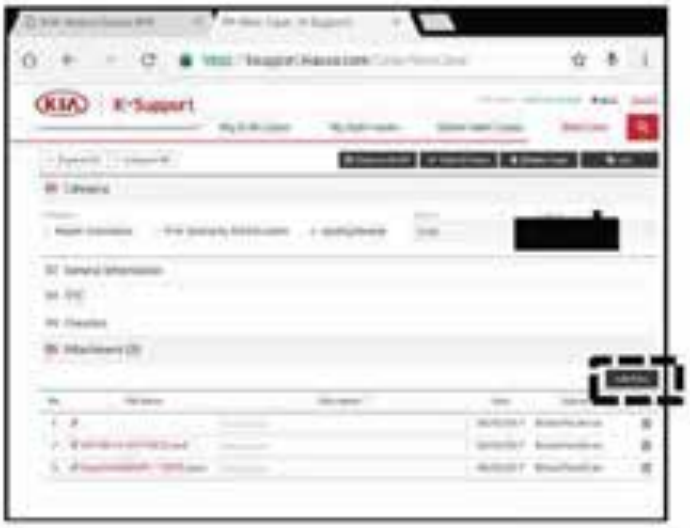
2. Open your existing Techline case for the vehicle requiring a video capture by selecting the case number.



3. Select "Attachment".



4. Select "Add Files".



5. Select "Camcorder" and the video camera will open.



6. Start by recording the VIN. Ensure sun glare is not reflecting off windows or other objects.

   Without stopping the recording, capture the area of the vehicle displaying the issue. i.e.;

   - Engine Noise – record the engine.
   - Hole In Block – record the side of the engine with the damage.
   - Seized Engine – record a technician trying to turn the engine over with a breaker bar.



*** NOTICE**

NOTE: Ensure the video size is set to "Limit to email" (see page 31). <u>Only record the VIN and the engine exhibiting the concern.</u> Any additional information will increase the size of the video and make it difficult to upload or download.

7. Stop the video when you captured what is needed. Select "OK" to use this capture or "RETRY" to capture the video again.

8. Ensure a description of the recording. For example, engine knock or smoke from exhaust.

9. Select "Submit Case".



10. Select "Yes" when the confirmation message below appears.

    Note: Selecting anything other than "Yes" will not save the video capture.



PE19-004

KIA

TAB 65_ PI1802WX_TSB_R

	GROUP	MODEL
KIA	**Product Improvement**	**See Model List on Page 1**
	NUMBER	DATE
	PI1802W/X (Rev 2, 02/11/2019)	**October 2018**

PRODUCT IMPROVEMENT CAMPAIGN

SUBJECT: ENGINE REPLACEMENT INSTRUCTIONS FOR DTC P1326 (PI1802W/X)

★ NOTICE

This bulletin has been revised to include additional information. New/revised sections of this bulletin are indicated by a black bar in the margin area.

This bulletin provides information related to the Technical Service Bulletin previously published in July 2018 (PI1802, Rev 6, 01/31/2019) titled "Knock Sensor Detection System - ECU Logic Improvement". Specifically, this bulletin provides instructions on which procedures to follow if, after installation of the KSDS, any one of the subject vehicles below returns to the dealer with Diagnostic Trouble Code ("DTC"), P1326.

Year	Model	Engine	Production Date
2014	Optima (TF)	2.4L GDI	8/29/13 – 4/25/14
2015-2018	Optima (TF/QF/JF/JFa)	2.4L & 2.0L T-GDI	4/16/14 – 7/11/18
2014-2018	Sportage (SL/QL)	2.4L & 2.0L T-GDI	9/30/13 – 4/5/18
2015-2018	Sorento (XMa/UMa)	2.4L & 2.0L T-GDI	1/3/14 – 3/7/18

If DTC P1326 is present, first check for any wiring signal interference following the procedure set forth below before determining whether an engine replacement is necessary. Based on the results of the Wiring Signal Interference Check, dealers are to perform either the Knock Sensor Wiring Repair or the Engine Long-Block Replacement according to the procedures in this TSB.

If the vehicle's engine is already seized or severely knocking, dealers are to perform the Engine Long-Block Replacement **and** the Wiring Signal Interference Check according to the procedures in this TSB.

A Vehicle Diagnosis Number (VDN) must be created with DTC P1326, prior to performing PI1802W/X. If a VDN is not created, Warranty claim submission issues may occur.

Before conducting the procedure, verify the vehicle is included in the list of affected VINs.

★ NOTICE

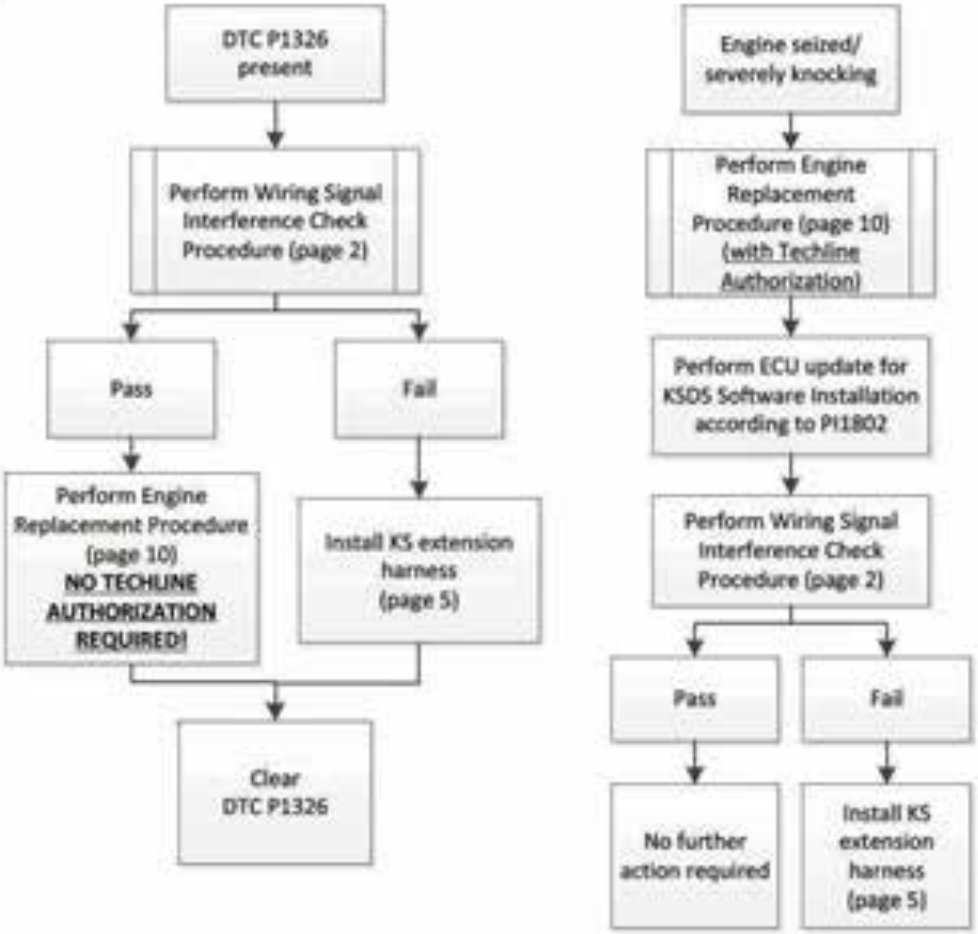
To ensure complete customer satisfaction, always remember to refer to WebDCS Warranty Coverage (validation) Inquiry Screen (Service → Warranty Coverage → Warranty Coverage Inquiry) for a list of any additional campaigns that may need to be performed on the vehicle before returning it to the customer.

File Under: <Product Improvement>

Circulate To: ☒ General Manager ☒ Service Manager ☒ Parts Manager ☒ Service Advisors ☒ Technicians ☒ Body Shop Manager ☐ Fleet Repair

SUBJECT: ENGINE REPLACEMENT INSTRUCTIONS FOR DTC P1326 (PI1802W/X)

Flow Chart:



Wiring Signal Interference Check Procedure:

1. Using the KDS **(connected to the Internet)**, perform a Fault Code Search and confirm DTC P1326 is present.
   - If P1326 is present, proceed to the next step to perform the wiring signal interference check.
   - If the engine is seized or severely knocking, proceed to the engine replacement procedure on page 10.



2. Start/warm up the engine and ensure **ENGINE OIL** is at operating temperature (176°F).



3. From the KDS Home Screen, select S/W Management.



4. Select Engine Control → Wiring Signal Interference Check.



5. Ensure the engine is on and at idle and **ENGINE OIL** temperature is at 176°F degrees or higher. Select OK to proceed.



5b. Select OK to proceed.

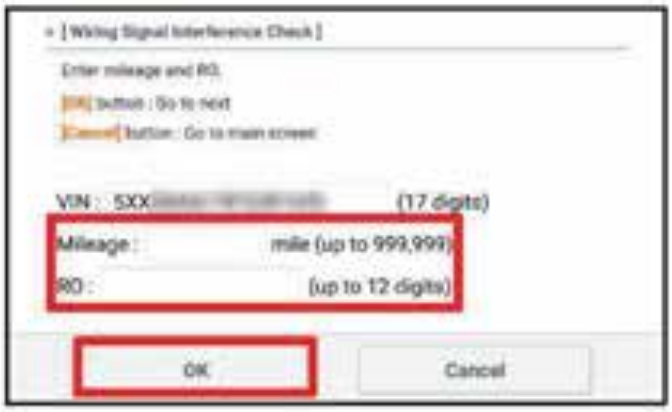
NOTE: This test should only be performed if Knock Sensor Detection System - ECU Logic Improvement (PI1802) has previously been completed.



5c. If the conditions are not met, a pop-up as shown will be displayed.



6. Enter vehicle mileage and RO number (VIN is automatically populated).



7. Wiring Signal Interference Check test will begin and take about three (3) minutes to complete. **NOTE**: Do not push on the accelerator pedal.



- If the result is "OK", turn the engine off and proceed to the Engine Replacement procedure on page 10.



- If the result is "NOT OK", turn the engine off and proceed to **step 2** of the Knock Sensor (KS) Extension Harness Installation procedure on page 5.



SUBJECT: ENGINE REPLACEMENT INSTRUCTIONS FOR DTC P1326 (PI1802W/X)

KS Extension Harness Installation Procedure:

NOTE: Photos below are from a 15MY Optima (QF). Components and their location may vary in different models.

1. Inspect the ECU harness (A) and verify if the Knock Sensor wiring extension harness (B) has previously been installed.

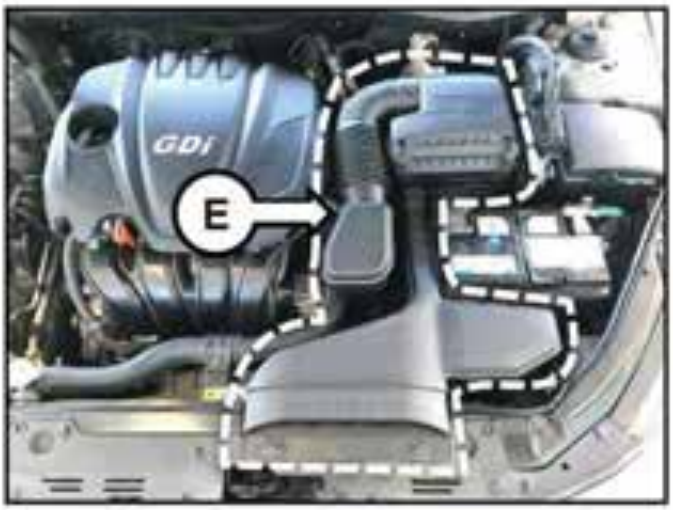
   NOTE: To identify the extension harness (B), look for an external harness (B) which should be cable-tied to the existing wiring harness (A) leading by the intake manifold (C) to the knock sensor (D), as shown.

   - If the extension harness (B) has been installed, open a Techline case online.
   - If the extension harness (B) has not been installed, proceed to the next step.





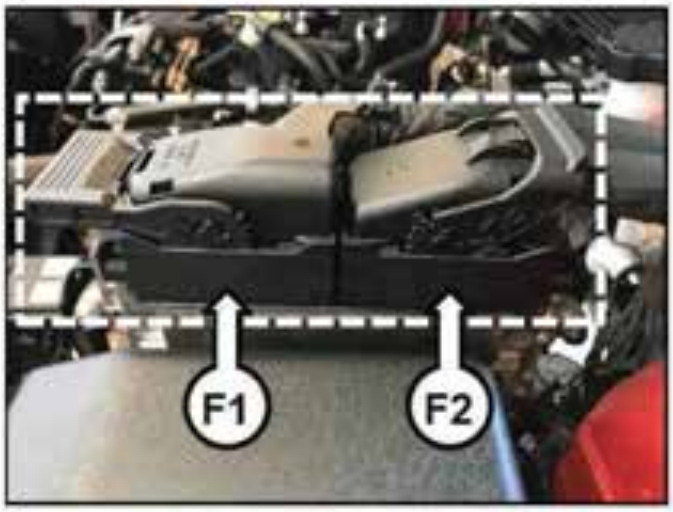
2. Remove the air cleaner and duct assembly (E).



3. Disconnect the ECU connector* (figure F1 **or** F2) (*see IMPORTANT note below).

*** IMPORTANT**

Location of the ECU connector may vary from model to model. Refer to the table on page 6 for the ECU connector number and the applicable ETM Manual on KGIS for the location of the ECU connector.

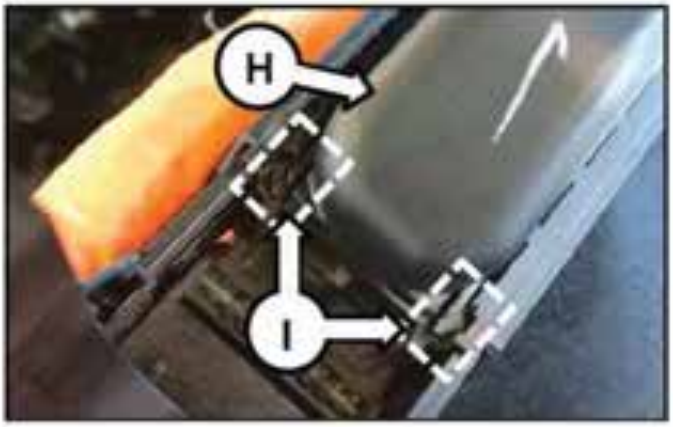


MY	Model	Engine	ECU Connector Number
2014-2015	TF	2.4	C200-B
2015	QF	2.4	C200-B
		2.0T	C100-B
2016-2018	JF/JFa	2.4	C200-A
	JFa	2.0T	C100-A
2015	XMa	2.4	C300-B
2016-2018	UMa	2.4	C100-A
		2.0T	C200-A
2014-2016	SL	2.4	CHGG-BG
		2.0T	CHTG-BG
2017-2018	QL	2.4	C100-A
		2.0T	C200-A

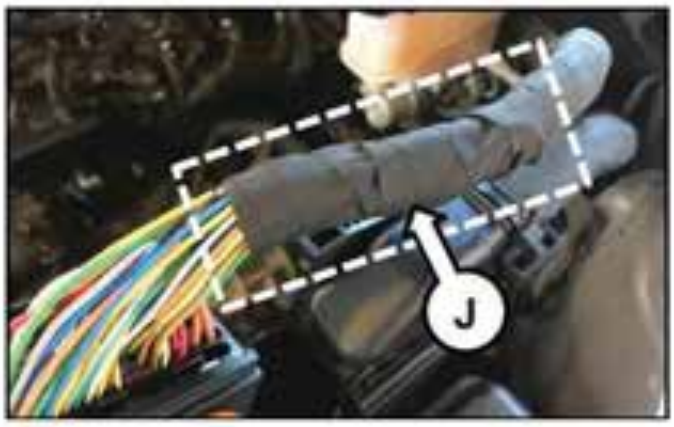
4. Cut the existing cable-tie (G) from the connector.



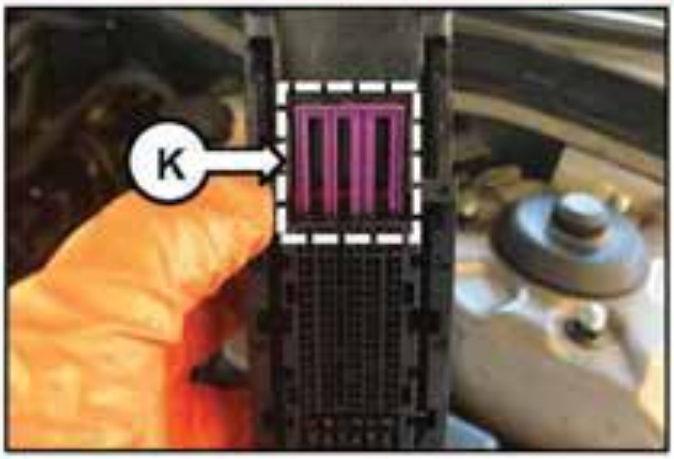
5. Remove the ECU connector cover (H) by carefully unclipping the two (2) tabs (I) and sliding the cover (H) towards the tabs (I).



6. Carefully remove the electrical tape (J) to expose the harness wires.



7. Remove the pin retainer (K).

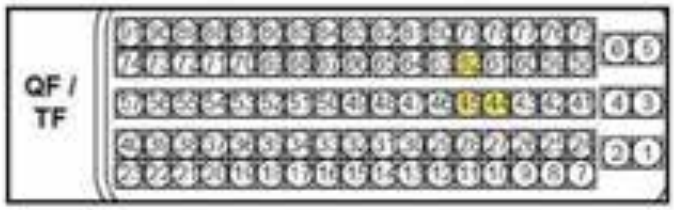


8. Locate the three (3) knock sensor circuit terminals from the ECU connector. Refer to the "Schematic Diagrams → Engine Electrical System → Engine Control System → Schematic Diagrams" chapter of the applicable ETM on KGIS.

QF, TF, XMa, and SL	
Pin	Wire
44	Knock Sensor Shielded Ground
45	Knock Sensor Ground
62	Knock Sensor Interface (Signal)

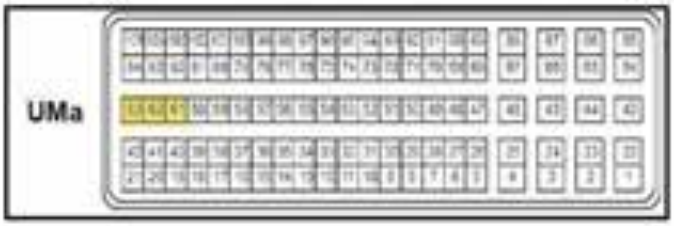
UMa, JF, JFa, and QL	
Pin	Wire
61	Knock Sensor Shielded Ground
62	Knock Sensor Ground
63	Knock Sensor Interface (Signal)

Click here to see a video of terminal removal.









*** IMPORTANT**

Location of the ECU connector may vary from model to model. Refer to the table on page 6 for the ECU connector number and the applicable ETM Manual on KGIS for the location of the ECU connector.

9. Remove the three (3) terminals **one at a time** and insert the new terminals of the extension harness into the ECU connector (F). Reinstall pin retainer (K) and reassemble the connector (F).

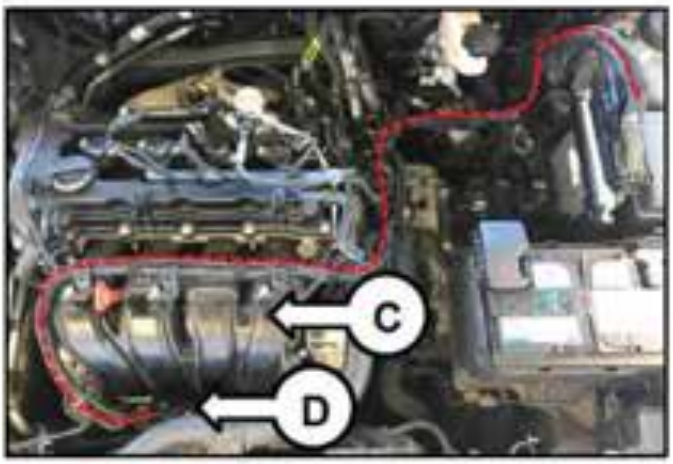


QF, TF, XMa, and SL	
Pin	**Extension Wire Color**
44	Blue
45	Black
62	Red

UMa, JF, JFa, and QL	
Pin	**Extension Wire Color**
61	Blue
62	Black
63	Red

NOTE: Be sure to note the <u>rotational position</u> of the terminals during removal. They are <u>directional</u> and need to be reinstalled in the same "clock" position.

10. Route the extension harness (B) along the existing harness (A) leading by the intake manifold (C) to the knock sensor (D), as shown.



*** IMPORTANT**

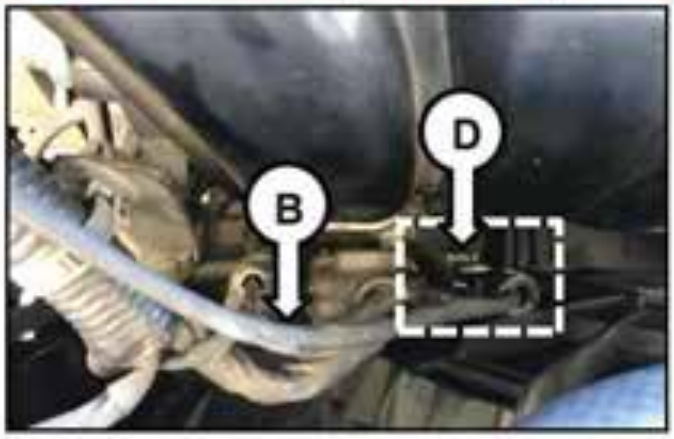
The harness (B) must be routed above and secured to the harness protector (L1) and UNDER the Breather Hose (L2) and Camshaft Position Sensor (L3).





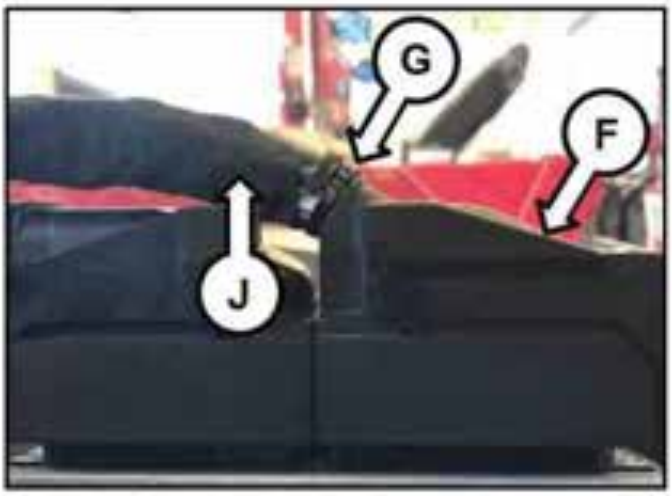


11. Connect the extension harness (B) to the knock sensor (D).

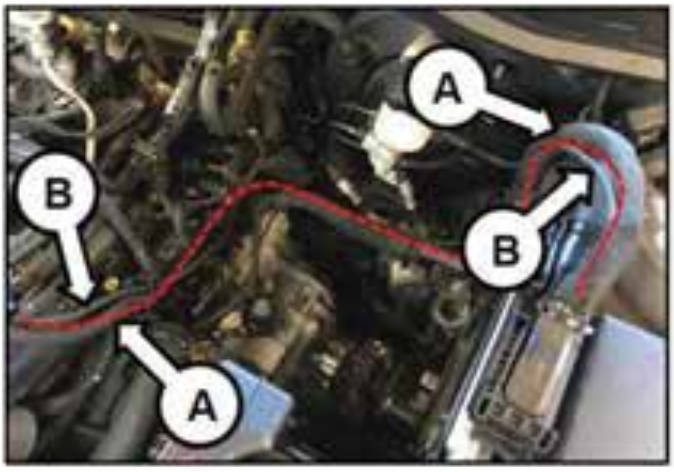


12. Cut off and discard the three (3) old knock sensor circuit terminals and the old knock sensor connector and secure the remaining wires to the new extension harness using the supplied electrical tape. **NOTE**: Complete removal of the old knock sensor wires is not necessary. Only remove the old terminals and connector.

13. Secure the extension harness at the connector (F) by replacing the cable-tie (G) removed in step 4 with a new supplied cable-tie and the electrical tape (J) removed in step 6 with new supplied electrical tape.



14. Secure the extension harness (B) to the existing harness (A) using the supplied cable-ties. Tuck and secure any excess wiring of the extension harness near the ECU with cable-tie.



15. Reinstall all removed components in the reverse order of removal.

16. Erase the P1326 DTC with the KDS and start the engine to confirm proper operation.

Engine Replacement Procedure:

1. Remove the engine assembly by referring to the "Engine And Transmission (Transaxle) Assembly → Engine And Transmission (Transaxle) Assembly → Repair procedures" chapter in the applicable Shop Manual on KGIS.

   Refer to TSB ENG190 for information regarding engine replacement practices.



2. After removal of the engine from the vehicle, remove all components that will need to be transferred by referring to the applicable Shop Manual on KGIS.

3. Place the new engine block on an engine stand.

4. Install all removed components from the old engine block onto the new engine block utilizing all parts from Service Kit I and II. Be advised of notes below.

Notes:

High Pressure Pump & Roller Tappet:

- Refer to TSB ENG083 for special attention and handling procedures of GDI-specific components.
- When installing the high pressure pump and roller tappet onto the new engine, apply engine oil to the roller tappet, and O-rings of the high pressure pump.

Tightening torques of pump bolts:
9.4 – 10.9 lb.ft (12.8 – 14.7 N.m, 1.3 – 1.5 kgf.m)

Tightening torques of pipe flare nut:
19.5 – 23.9 lb.ft (26.5 – 32.4 N.m, 2.7 – 3.3 kgf.m)

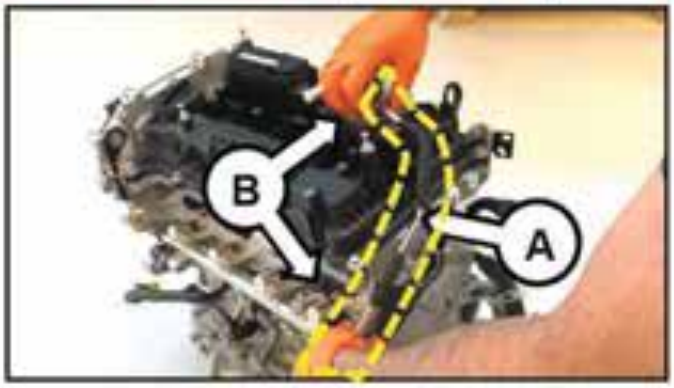


*** NOTICE**

Refer to TSB ENG083 for gasoline direct injection (GDI) specific information, including related warnings and cautions for handling high fuel pressure system components.

High Pressure Fuel Pipe:

1. Properly position the new fuel pipe (A) and then hand-tighten both flare nuts (B).



2. Install the pipe retaining bracket and bolt (C) and torque to specifications.

★ NOTICE

If the bracket and bolt are missing, order and install a new bracket and bolt.

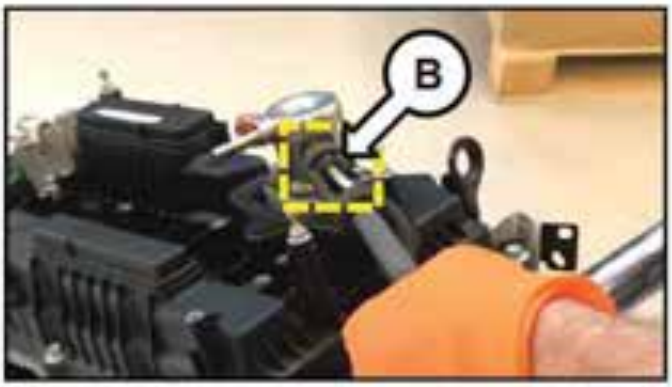
Tightening torque (bracket bolt):
5.8 – 8.7 lb.ft (7.8 –11.8 N.m, 0.8 – 1.2 kgf.m)



3. Using a click-type/electronic torque wrench and SST 09314-3Q100, torque both flare nuts (B) to specifications.

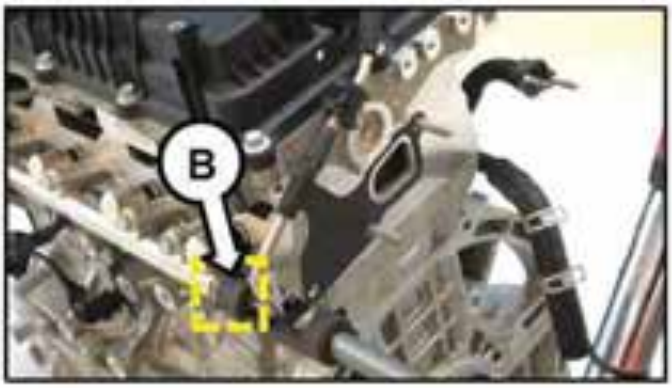
Tightening torque (flare nuts):
19.5 – 23.9 lb.ft (26.5 – 32.4 N.m, 2.7 – 3.3 kgf.m)

Click here to see a video tutorial of high pressure fuel pipe install (includes high pressure pump install).



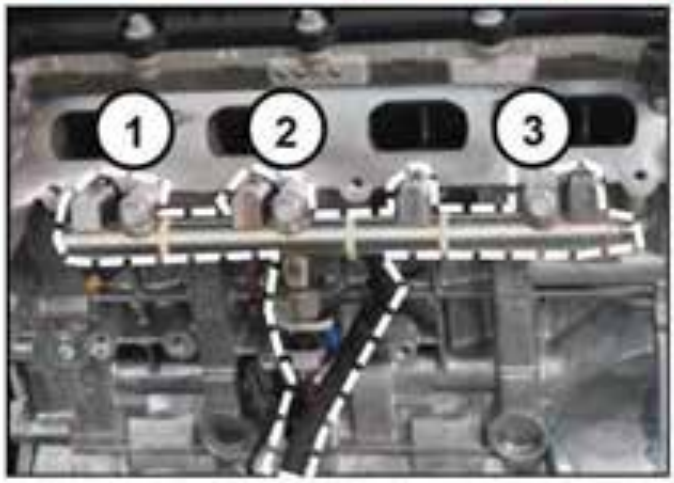
★ IMPORTANT

The high pressure fuel pipe bracket and bolt must be installed and properly torqued prior to torqueing the high pressure fuel pipe flare nuts.



Delivery Pipe:

- Refer to TSB ENG083 for special attention and handling procedures of GDI-specific components.
- Prior to installing the delivery pipe, be sure to replace all of the injector O-rings and injector retainers.
- Prior to installing the delivery pipe, apply engine oil to the injector O-rings.
- When installing the delivery pipe, use caution not to damage the tip of the injector.
- Be sure to replace the delivery pipe retaining bolts and torque them in the sequence shown.



Tightening torque of bolts:
13.7 – 17.4 lb.ft (18.6 – 23.5 N.m, 1.9 – 2.4 kgf.m)

*** NOTICE**

Combustion seals must be compressed after installation and before attempting to install into the cylinder head. Use SST 09353 2B000 (refer to TSB ENG083).

Dipstick Tube & Dipstick:

- Prior to installing the new tube, lubricate the o-ring located at the bottom of the tube with engine oil.
- Install the red dipstick included in Service Kit I.

Tightening torque of bolt:
5.8 – 8.7 lb.ft (7.8 – 11.8 N.m, 0.8 - 1.2 kgf.m)



Intake Manifold:

- Prior to installation, replace the intake manifold gaskets.
- Torque bolts in the sequence shown.

Tightening torque of bolts:
13.7 – 17.4 lb.ft (18.6 – 23.5 N.m, 1.9 – 2.4 kgf.m)

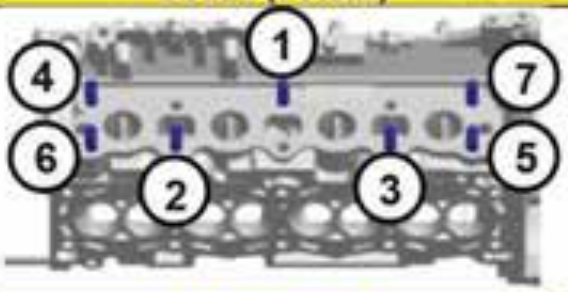


Exhaust Manifold:

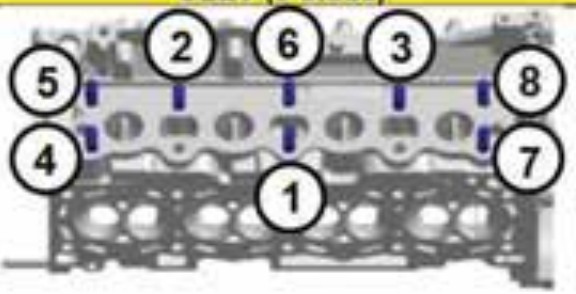
- All engines supplied under this Product Improvement Campaign have the exhaust manifold studs configured for SULEV engines.
- Using the pictures to the right, check the exhaust manifold stud location and quantity. Relocate as required for ULEV engines and obtain one (1) extra from the removed engine.
- Prior to installation, replace the exhaust manifold gasket and front muffler gasket.
- Torque nuts in the sequence shown.

Tightening torque of nuts:
36.2 – 39.7 lb.ft (49.0 – 53.9 N.m, 5.0 – 5.5 kgf.m)

SULEV (7 studs)



ULEV (8 studs)

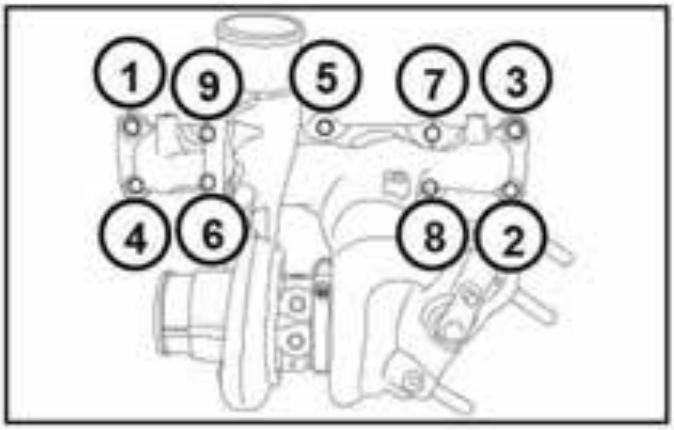


***For 15MY Sorento (XMa) vehicles <u>only</u>: check the underhood emissions label and record whether the label references ULEV or SULEV. This information is needed to select/order the correct replacement engine.**



- <u>On Turbo engines</u>, replace the turbocharger oil feed line and gaskets.

Tightening torque of oil feed line bolt:
8.7 – 13.0 lb.ft (11.8 – 17.7 N.m, 1.2 – 1.8 kgf.m)
Tightening torque of oil feed line nuts:
5.8 – 8.7 lb.ft (7.8 – 11.8 N.m, 0.8 – 1.2 kgf.m)
Tightening torque of oil drain line nuts and bolts:
5.8 – 8.7 lb.ft (7.8 – 11.8 N.m, 0.8 – 1.2 kgf.m)



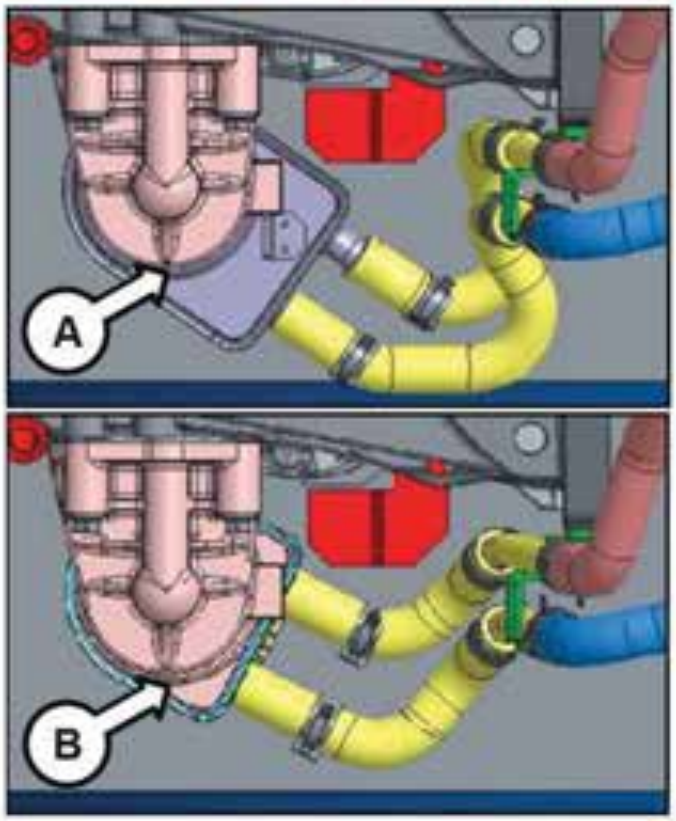
- Torque exhaust manifold nuts in the sequence shown.

Tightening torque of nuts:
36.2 – 39.7 lb.ft (49.0 – 53.9 N.m, 5.0 – 5.5 kgf.m)

Oil Cooler Tube Assembly:

New engines may be supplied with a different oil cooler. Use steps below to determine the need for a replacement oil cooler tube assembly.

- If the new engine's (bigger) oil cooler (A) does not match the old engine's (smaller) oil cooler (B), replace the oil cooler tube assembly with the improved part. See parts table on page 17.
- If the new engine's (bigger) oil cooler (A) matches the old engine's (bigger) oil cooler (A), reuse the old engine's oil cooler tube assembly.
- If the new engine's (smaller) oil cooler (B) matches the old engine's (smaller) oil cooler (B), reuse the old engine's oil cooler tube assembly.



Drive Plate Bolts:

- Replace all seven (7) drive plate (AT) bolts.

Tightening torque of nuts:
86.8 – 93.9 lb.ft (117.7 – 125.5 N.m, 12.0 – 13.0 kgf.m)



Drive Plate Bolt (A/T)

Torque Converter

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


Not Fully Inserted


Fully Inserted

5. Reinstall the assembled engine and transmission/transaxle into the vehicle.

   Be sure to:

   - Fill crankcase with 5W-30 oil (~5.8 quarts).
   - Fill and bleed the cooling system with 50/50 coolant or mixture appropriate for area.
   - Pressurize the fuel system before starting the vehicle.
   - Reset engine adaptive values and perform steering angle sensor calibration.

   Refer to TSB ENG190 for information regarding engine replacement practices.

6. Verify proper operation of the vehicle with road test, and **erase any stored DTCs** (e.g., EPS, ESC, and TPMS) that may have been set by this procedure. Verify no leaks exist and ensure engine oil and coolant are at their proper level.

   If any DTCs are still active, follow any related diagnosis and repair as needed.

SUBJECT: ENGINE REPLACEMENT INSTRUCTIONS FOR DTC P1326 (PI1802W/X)

AFFECTED VEHICLE RANGE:

Model	Production Date Range
14MY Optima (TF)	August 29, 2013 through April 25, 2014
15-18MY Optima (TF/QF/JF/JFa)	April 16, 2014 through July 11, 2018
14-18MY Sportage (SL/QL)	September 30, 2013 through April 5, 2018
15-18MY Sorento (XMa/UMa)	January 3, 2014 through March 7, 2018

REQUIRED TOOL:

Tool Name	Tool Part No.	Figure	Comments
Torque Wrench Socket	09314 3Q100		Refer to TSB ENG083 for detailed usage instructions
Injector Combustion Seal Ring Installer	09353 2B000		
Pin Tool	91400 00000QQK		Auto-shipped to Dealers in 10/2018. Replacements can be ordered through Mobis Parts America.
Click-Type or Electronic Torque Wrench	N/A		Locally Sourced

REQUIRED PARTS:

Part Name	MY	Model	Part Number		Figure
			2.4L GDI	2.0L T-GDI	
Engine Long Block	14-15	TF	21101 2GK06QQKR	-	
	14-16	SL	21101 2GK36QQKR	21101 2GK37QQKR	
	15	QF	21101 2GK06QQKR	21101 2GK08QQKR	
		XMa ULEV & SULEV	21101 2GK11QQKR	-	
	17-18	QL	21101 2GK35QQKR	21101 2GK39QQKR	
	16-17	UMa	21101 2GK31QQKR	21101 2GK32QQKR	
	18		21101 2GK33QQKR		
	16-18	JF, JFa	21101 2GK34QQKR	21101 2GK32QQKR	

Models	Part Name	Engine	Part Number	Figure
TF, SL, QF, XMa	Service Kit I	2.4L GDI	21111 2GK50QQK	
		2.0L T-GDI	21111 2GK60QQK	
UMa, QL, JF, JFa		2.4L GDI	21111 2GK51QQK	
		2.0L T-GDI	21111 2GK52QQK	

SUBJECT: ENGINE REPLACEMENT INSTRUCTIONS FOR DTC P1326 (PI1802W/X)

Models	Part Name	Engine	Part Number	Figure
TF, SL, QF, XMa	Service Kit II	2.4L GDI and 2.0L T-GDI	21111 2GK70QQK	
UMa, QL, JF, JFa		2.4L GDI	21111 2GK71QQK	
		2.0L T-GDI	21111 2GK72QQK	
TF, SL, QF, XMa	KS Extension Harness	2.4L GDI and 2.0L T-GDI	*91400 2T100QQK	
UMa, QL, JF, JFa		2.4L GDI and 2.0L T-GDI	91400 2T010QQK	
All	Drive Plate Bolts	2.4L GDI and 2.0L T-GDI	23311 25050	
	Oil Cooler Tube Assembly (replacement is conditional, refer to page 14)	2.4L GDI	25470 2G050QQK	
		2.0L T-GDI	25470 2G650QQK	

*NOTE: Old part number 91400 2T000QQK has been superseded by new part number 91400 2T100QQK.

SUBJECT: ENGINE REPLACEMENT INSTRUCTIONS FOR DTC P1326 (PI1802W/X)

WARRANTY INFORMATION (PI1802**W1**, MIL ON WITH P1326):

N Code: N99 C Code: C99

Model	Claim Type	Causal P/N	Qty.	Repair Description	Labor Op Code	Op Time	Replacement P/N	Qty.
Scr. (XMa) 2.4L	R	21020 2G010	0	(PI1802**W1**) 2.4L GDI 2WD MIL ON with P1326, KSDS Wire Harness Inspection Pass, & Engine Replacement	180A12R0	8.4 M/H	21111 2GK50QQKR	1
							21111 2GK70QQKR	1
							23311 25050	7
							(ULEV or SULEV) 21101 2GK11QQKRR	1
				(PI1802**W1**) 2.4L GDI 2WD MIL ON with P1326, KSDS Wire Harness Inspection Fail, KSDS Extension Harness Install	180A12R2	0.8 M/H	*91400 2T100QQK	1
				(PI1802**W1**) 2.4L GDI AWD MIL ON with P1326, KSDS Wire Harness Inspection Pass, & Engine Replacement	180A12R1	8.6 M/H	21111 2GK50QQK	1
							21111 2GK70QQK	1
							23311 25050	7
							(ULEV or SULEV) 21101 2GK11QQKR	1
				(PI1802**W1**) 2.4L GDI AWD MIL ON with P1326, KSDS Wire Harness Inspection Fail, KSDS Extension Harness Install	180A12R3	0.8 M/H	*91400 2T100QQK	1
Opt. (QF) 2.4L	R	23060 2G400	0	(PI1802**W1**) 2.4L GDI MIL ON with P1326, KSDS Wire Harness Inspection Pass, & Engine Replacement	180A16R1	8.4 M/H	21111 2GK50QQK	1
							21111 2GK70QQK	1
							23311 25050	7
							21101 2GK06QQKR	1
				(PI1802**W1**) 2.4L GDI MIL ON with P1326, KSDS Wire Harness Inspection Fail, KSDS Extension Harness Install	180A16R3	0.8 M/H	*91400 2T100QQK	1
Opt. (QF) 2.0L T	R	23060 2G400	0	(PI1802**W1**) 2.0L T-GDI MIL ON with P1326, KSDS Wire Harness Inspection Pass, & Engine Replacement	180A16R0	8.6 M/H	21111 2GK60QQK	1
							21111 2GK70QQK	1
							23311 25050	7
							21101 2GK06QQKR	1
				(PI1802**W1**) 2.0L T-GDI MIL ON with P1326, KSDS Wire Harness Inspection Fail, KSDS Extension Harness Install	180A16R2	0.8 M/H	*91400 2T100QQK	1
Opt. (TF) 2.4L	R	23060 2G400	0	(PI1802**W1**) 2.4L GDI MIL ON with P1326, KSDS Wire Harness Inspection Pass, & Engine Replacement	180111R0	8.4 M/H	21111 2GK50QQK	1
							21111 2GK70QQK	1
							23311 25050	7
							21101 2GK06QQKR	1
				(PI1802**W1**) 2.4L GDI MIL ON with P1326, KSDS Wire Harness Inspection Fail, KSDS Extension Harness Install	180111R5	0.8 M/H	*91400 2T100QQK	1

***NOTE: Old part number 91400 2T000QQK has been superseded by new part number 91400 2T100QQK.**

SUBJECT: ENGINE REPLACEMENT INSTRUCTIONS FOR DTC P1326 (PI1802W/X)

Model	Claim Type	Causal P/N	Qty.	Repair Description	Labor Op Code	Op Time	Replacement P/N	Qty.
Spo. (SL) 2.4L	R	23060 2G400	0	(PI1802W1) 2.4L GDI 2WD MIL ON with P1326, KSDS Wire Harness Inspection Pass, & Engine Replacement	160112R0	7.7 M/H	21111 2GK50QQK	1
							21111 2GK70QQK	1
							23311 25050	7
							21101 2GK36QQKR	1
				(PI1802W1) 2.4L GDI 2WD MIL ON with P1326, KSDS Wire Harness Inspection Fail, KSDS Extension Harness Install	160112R5	0.9 M/H	*91400 2T100QQK	1
				(PI1802W1) 2.4L GDI AWD MIL ON with P1326, KSDS Wire Harness Inspection Pass, & Engine Replacement	160112R2	8.1 M/H	21111 2GK50QQK	1
							21111 2GK70QQK	1
							23311 25050	7
							21101 2GK36QQKR	1
				(PI1802W1) 2.4L GDI AWD MIL ON with P1326, KSDS Wire Harness Inspection Fail, KSDS Extension Harness Install	160112R7	0.9 M/H	*91400 2T100QQK	1
Spo. (SL) 2.0L T	R	23060 2G400	0	(PI1802W1) 2.0L T-GDI 2WD MIL ON with P1326, KSDS Wire Harness Inspection Pass, & Engine Replacement	160112R3	7.7 M/H	21111 2GK60QQK	1
							21111 2GK70QQK	1
							23311 25050	7
							21101 2GK37QQKR	1
				(PI1802W1) 2.0L T-GDI 2WD MIL ON with P1326, KSDS Wire Harness Inspection Fail, KSDS Extension Harness Install	160112R8	0.9 M/H	*91400 2T100QQK	1
				(PI1802W1) 2.0L T-GDI AWD MIL ON with P1326, KSDS Wire Harness Inspection Pass, & Engine Replacement	160112R4	8.1 M/H	21111 2GK60QQK	1
							21111 2GK70QQK	1
							23311 25050	7
							21101 2GK37QQKR	1
				(PI1802W1) 2.0L T-GDI AWD MIL ON with P1326, KSDS Wire Harness Inspection Fail, KSDS Extension Harness Install	160112R9	0.9 M/H	*91400 2T100QQK	1

***NOTE: Old part number 91400 2T000QQK has been superseded by new part number 91400 2T100QQK.**

SUBJECT: ENGINE REPLACEMENT INSTRUCTIONS FOR DTC P1326 (PI1802W/X)

Model	Claim Type	Causal P/N	Qty.	Repair Description	Labor Op Code	Op Time	Replacement P/N	Qty.
Sor. (UMa) 2.4L	R	23060 2G401	0	(PI1802W1) 2.4L GDI 2WD MIL ON with P1326, KSDS Wire Harness Inspection Pass, & Engine Replacement	180A32R0	8.4 M/H	21111 2GK51QQK	1
							21111 2GK71QQK	1
							23311 25050	7
							(16-17MY) 21101 2GK31QQKR	1
							(18MY) 21101 2GK33QQKR	
				(PI1802W1) 2.4L GDI 2WD MIL ON with P1326, KSDS Wire Harness Inspection Fail, KSDS Extension Harness Install	180A32R4	0.8 M/H	91400 2T010QQK	1
				(PI1802W1) 2.4L GDI AWD MIL ON with P1326, KSDS Wire Harness Inspection Pass, & Engine Replacement	180A32R1	8.7 M/H	21111 2GK51QQK	1
							21111 2GK71QQK	1
							23311 25050	7
							(16-17MY) 21101 2GK31QQKR	1
							(18MY) 21101 2GK33QQKR	
				(PI1802W1) 2.4L GDI AWD MIL ON with P1326, KSDS Wire Harness Inspection Fail, KSDS Extension Harness Install	180A32R5	0.8 M/H	91400 2T010QQK	1
Sor. (UMa) 2.0L T	R	23060 2G401	0	(PI1802W1) 2.0L T-GDI 2WD MIL ON with P1326, KSDS Wire Harness Inspection Pass, & Engine Replacement	180A32R2	8.4 M/H	21111 2GK52QQK	1
							21111 2GK72QQK	1
							23311 25050	7
							21101 2GK32QQKR	1
				(PI1802W1) 2.0L T-GDI 2WD MIL ON with P1326, KSDS Wire Harness Inspection Fail, KSDS Extension Harness Install	180A32R6	0.8 M/H	91400 2T010QQK	1
				(PI1802W1) 2.0L T-GDI AWD MIL ON with P1326, KSDS Wire Harness Inspection Pass, & Engine Replacement	180A32R3	8.7 M/H	21111 2GK52QQK	1
							21111 2GK72QQK	1
							23311 25050	7
							21101 2GK32QQKR	1
				(PI1802W1) 2.0L T-GDI AWD MIL ON with P1326, KSDS Wire Harness Inspection Fail, KSDS Extension Harness Install	180A32R7	0.8 M/H	91400 2T010QQK	1

SUBJECT: ENGINE REPLACEMENT INSTRUCTIONS FOR DTC P1326 (PI1802W/X)

Model	Claim Type	Causal P/N	Qty.	Repair Description	Labor Op Code	Op Time	Replacement P/N	Qty.
Spo. (QL) 2.4L	R	23060 2G401	0	(PI1802W1) 2.4L GDI 2WD MIL ON with P1326, KSDS Wire Harness Inspection Pass, & Engine Replacement	180114R0	8.4 M/H	21111 2GK51QQK	1
							21111 2GK71QQK	1
							23311 25050	7
							21101 2GK35QQKR	1
				(PI1802W1) 2.4L GDI 2WD MIL ON with P1326, KSDS Wire Harness Inspection Fail, KSDS Extension Harness Install	180114R5	0.8 M/H	91400 2T010QQK	1
				(PI1802W1) 2.4L GDI AWD MIL ON with P1326, KSDS Wire Harness Inspection Pass, & Engine Replacement	180114R2	8.7 M/H	21111 2GK51QQK	1
							21111 2GK71QQK	1
							23311 25050	7
							21101 2GK35QQKR	1
				(PI1802W1) 2.4L GDI AWD MIL ON with P1326, KSDS Wire Harness Inspection Fail, KSDS Extension Harness Install	180114R7	0.8 M/H	91400 2T010QQK	1
Spo. (QL) 2.0L T	R	23060 2G401	0	(PI1802W1) 2.0L T-GDI 2WD MIL ON with P1326, KSDS Wire Harness Inspection Pass, & Engine Replacement	180114R3	8.4 M/H	21111 2GK52QQK	1
							21111 2GK72QQK	1
							23311 25050	7
							21101 2GK39QQKR	1
				(PI1802W1) 2.0L T-GDI 2WD MIL ON with P1326, KSDS Wire Harness Inspection Fail, KSDS Extension Harness Install	180114R8	0.8 M/H	91400 2T010QQK	1
				(PI1802W1) 2.0L T-GDI AWD MIL ON with P1326, KSDS Wire Harness Inspection Pass, & Engine Replacement	180114R4	8.7 M/H	21111 2GK52QQK	1
							21111 2GK72QQK	1
							23311 25050	7
							21101 2GK39QQKR	1
				(PI1802W1) 2.0L T-GDI AWD MIL ON with P1326, KSDS Wire Harness Inspection Fail, KSDS Extension Harness Install	180114R9	0.8 M/H	91400 2T010QQK	1

SUBJECT: ENGINE REPLACEMENT INSTRUCTIONS FOR DTC P1326 (PI1802W/X)

Model	Claim Type	Causal P/N	Qty.	Repair Description	Labor Op Code	Op Time	Replacement P/N	Qty.
Opt. (JF) 2.4L	R	23060 2G401	0	(PI1802W1) 2.4L GDI MIL ON with P1326, KSDS Wire Harness Inspection Pass, & Engine Replacement	180113R0	8.4 M/H	21111 2GK51QQK	1
							21111 2GK71QQK	1
							23311 25050	7
							21101 2GK34QQKR	1
				(PI1802W1) 2.4L GDI MIL ON with P1326, KSDS Wire Harness Inspection Fail, KSDS Extension Harness Install	180113R5	0.8 M/H	91400 2T010QQK	1
Opt. (JFa) 2.4L	R	23060 2G401	0	(PI1802W1) 2.4L GDI MIL ON with P1326, KSDS Wire Harness Inspection Pass, & Engine Replacement	180A33R0	8.4 M/H	21111 2GK51QQK	1
							21111 2GK71QQK	1
							23311 25050	7
							21101 2GK34QQKR	1
				(PI1802W1) 2.4L GDI MIL ON with P1326, KSDS Wire Harness Inspection Fail, KSDS Extension Harness Install	180A33R2	0.8 M/H	91400 2T010QQK	1
Opt. (JFa) 2.0L T	R	23060 2G401	0	(PI1802W1) 2.0L T-GDI MIL ON with P1326, KSDS Wire Harness Inspection Pass, & Engine Replacement	180A33R1	8.4 M/H	21111 2GK52QQK	1
							21111 2GK72QQK	1
							23311 25050	7
							21101 2GK32QQKR	1
				(PI1802W1) 2.0L T-GDI MIL ON with P1326, KSDS Wire Harness Inspection Fail, KSDS Extension Harness Install	180A33R3	0.8 M/H	91400 2T010QQK	1

SUBJECT: ENGINE REPLACEMENT INSTRUCTIONS FOR DTC P1326 (PI1802W/X)

WARRANTY INFORMATION (PI1802**X1**, ENGINE SEIZED/SEVERE KNOCKING):

N Code: N99 C Code: C99

Model	Claim Type	Causal P/N	Qty.	Repair Description	Labor Op Code	Op Time	Replacement P/N	Qty.
Sor. (XMa) 2.4L	R	21020 2G010	0	(PI1802**X1**) 2.4L GDI 2WD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Pass	180A12R8	8.4 M/H	21111 2GK50QQK	1
							21111 2GK70QQK	1
							23311 25050	7
							(ULEV or SULEV) 21101 2GK11QQKR	1
				(PI1802**X1**) 2.4L GDI 2WD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Fail, KSDS Wire Harness Install	180A12RA	8.9 M/H	21111 2GK50QQK	1
							21111 2GK70QQK	1
							23311 25050	7
							(ULEV or SULEV) 21101 2GK11QQKR	1
							*91400 2T100QQK	1
				(PI1802**X1**) 2.4L GDI AWD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Pass	180A12R9	8.6 M/H	21111 2GK50QQK	1
							21111 2GK70QQK	1
							23311 25050	7
							(ULEV or SULEV) 21101 2GK11QQKR	1
				(PI1802**X1**) 2.4L GDI AWD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Fail, KSDS Wire Harness Install	180A12RB	9.1 M/H	21111 2GK50QQK	1
							21111 2GK70QQK	1
							23311 25050	7
							(ULEV or SULEV) 21101 2GK11QQKR	1
							*91400 2T100QQK	1

***NOTE: Old part number 91400 2T000QQK has been superseded by new part number 91400 2T100QQK.**

SUBJECT: ENGINE REPLACEMENT INSTRUCTIONS FOR DTC P1326 (PI1802W/X)

Model	Claim Type	Causal P/N	Qty.	Repair Description	Labor Op Code	Op Time	Replacement P/N	Qty.
Opt. (QF) 2.4L	R	23060 2G400	0	(PI1802X1) 2.4L GDI Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Pass	180A16R9	8.4 M/H	21111 2GK50QGK	1
							21111 2GK70QGK	1
							23311 25050	7
							21101 2GK06QGKR	1
				(PI1802X1) 2.4L GDI Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Fail, KSDS Wire Harness Install	180A16RB	8.9 M/H	21111 2GK50QGK	1
							21111 2GK70QGK	1
							23311 25050	7
							21101 2GK06QGKR	1
							*91400 2T100QGK	1
Opt. (QF) 2.0L T	R	23060 2G400	0	(PI1802X1) 2.0L T-GDI Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Pass	180A16R8	8.7 M/H	21111 2GK60QGK	1
							21111 2GK70QGK	1
							23311 25050	7
							21101 2GK06QGKR	1
				(PI1802X1) 2.0L T-GDI Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Fail, KSDS Wire Harness Install	180A16RA	9.2 M/H	21111 2GK60QGK	1
							21111 2GK70QGK	1
							23311 25050	7
							21101 2GK06QGKR	1
							*91400 2T100QGK	1
Opt. (TF) 2.4L	R	23060 2G400	0	(PI1802X1) 2.4L GDI Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Pass	18D111RA	8.4 M/H	21111 2GK50QGK	1
							21111 2GK70QGK	1
							23311 25050	7
							21101 2GK06QGKR	1
				(PI1802X1) 2.4L GDI Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Fail, KSDS Wire Harness Install	18D111RF	8.9 M/H	21111 2GK50QGK	1
							21111 2GK70QGK	1
							23311 25050	7
							21101 2GK06QGKR	1
							*91400 2T100QGK	1

***NOTE: Part number 91400 2T000QGK has been superseded by a new part number 91400 2T100QGK.**

SUBJECT: ENGINE REPLACEMENT INSTRUCTIONS FOR DTC P1326 (PI1802W/X)

Model	Claim Type	Causal P/N	Qty.	Repair Description	Labor Op Code	Op Time	Replacement P/N	Qty.
Spo. (SL) 2.4L	R	23060 2G400	0	(PI1802X1) 2.4L GDI 2WD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Pass	180112RA	7.7 M/H	21111 2GK50QGK	1
							21111 2GK70QGK	1
							23311 25050	7
							21101 2GK36QGKR	1
				(PI1802X1) 2.4L GDI 2WD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Fail, KSDS Wire Harness Install	180112RF	8.3 M/H	21111 2GK50QGK	1
							21111 2GK70QGK	1
							23311 25050	7
							21101 2GK36QGKR	1
							*91400 2T100QGK	1
				(PI1802X1) 2.4L GDI AWD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Pass	180112RC	8.1 M/H	21111 2GK50QGK	1
							21111 2GK70QGK	1
							23311 25050	7
							21101 2GK36QGKR	1
				(PI1802X1) 2.4L GDI AWD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Fail, KSDS Wire Harness Install	180112RH	8.7 M/H	21111 2GK50QGK	1
							21111 2GK70QGK	1
							23311 25050	7
							21101 2GK36QGKR	1
							*91400 2T100QGK	1
Spo. (SL) 2.0L T	R	23060 2G400	0	(PI1802X1) 2.0L T-GDI 2WD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Pass	180112RD	7.7 M/H	21111 2GK60QGK	1
							21111 2GK70QGK	1
							23311 25050	7
							21101 2GK37QGKR	1
				(PI1802X1) 2.0L T-GDI 2WD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Fail, KSDS Wire Harness Install	180112RI	8.3 M/H	21111 2GK60QGK	1
							21111 2GK70QGK	1
							23311 25050	7
							21101 2GK37QGKR	1
							*91400 2T100QGK	1
				(PI1802X1) 2.0L T-GDI AWD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Pass	180112RE	8.1 M/H	21111 2GK60QGK	1
							21111 2GK70QGK	1
							23311 25050	7
							21101 2GK37QGKR	1
				(PI1802X1) 2.0L T-GDI AWD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Fail, KSDS Wire Harness Install	180112RJ	8.7 M/H	21111 2GK60QGK	1
							21111 2GK70QGK	1
							23311 25050	7
							21101 2GK37QGKR	1
							*91400 2T100QGK	1

***NOTE: Old part number 91400 2T000QGK has been superseded by new part number 91400 2T100QGK.**

SUBJECT: ENGINE REPLACEMENT INSTRUCTIONS FOR DTC P1326 (PI1802W/X)

Model	Claim Type	Causal P/N	Qty.	Repair Description	Labor Op Code	Op Time	Replacement P/N	Qty.
Sor. (UMa) 2.4L	R	23060 2G401	0	(PI1802X1) 2.4L GDI 2WD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Pass	180A32RA	8.4 M/H	21111 2GK51QGK	1
							21111 2GK71QGK	1
							23311 25050	7
							(16-17MY) 21101 2GK31QGKR	1
							(18MY) 21101 2GK33QGKR	
				(PI1802X1) 2.4L GDI 2WD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Fail, KSDS Wire Harness Install	180A32RB	8.9 M/H	21111 2GK51QGK	1
							21111 2GK71QGK	1
							23311 25050	7
							(16-17MY) 21101 2GK31QGKR	1
							(18MY) 21101 2GK33QGKR	
							91400 2T010QGK	1
				(PI1802X1) 2.4L GDI AWD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Pass	180A32RE	8.7 M/H	21111 2GK51QGK	1
							21111 2GK71QGK	1
							23311 25050	7
							(16-17MY) 21101 2GK31QGKR	1
							(18MY) 21101 2GK33QGKR	
				(PI1802X1) 2.4L GDI AWD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Fail, KSDS Wire Harness Install	180A32RF	9.2 M/H	21111 2GK51QGK	1
							21111 2GK71QGK	1
							23311 25050	7
							(16-17MY) 21101 2GK31QGKR	1
							(18MY) 21101 2GK33QGKR	
							91400 2T010QGK	1
Sor. (UMa) 2.0L T	R	23060 2G401	0	(PI1802X1) 2.0L T-GDI 2WD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Pass	180A32RC	8.4 M/H	21111 2GK52QGK	1
							21111 2GK72QGK	1
							23311 25050	7
							21101 2GK32QGKR	1
				(PI1802X1) 2.0L T-GDI 2WD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Fail, KSDS Wire Harness Install	180A32RD	8.9 M/H	21111 2GK52QGK	1
							21111 2GK72QGK	1
							23311 25050	7
							21101 2GK32QGKR	1
							91400 2T010QGK	1
				(PI1802X1) 2.0L T-GDI AWD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Pass	180A32RG	8.7 M/H	21111 2GK52QGK	1
							21111 2GK72QGK	1
							23311 25050	7
							21101 2GK32QGKR	1
				(PI1802X1) 2.0L T-GDI AWD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Fail, KSDS Wire Harness Install	180A32RH	9.2 M/H	21111 2GK52QGK	1
							21111 2GK72QGK	1
							23311 25050	7
							21101 2GK32QGKR	1
							91400 2T010QGK	1

SUBJECT: ENGINE REPLACEMENT INSTRUCTIONS FOR DTC P1326 (PI1802W/X)

Model	Claim Type	Causal P/N	Qty.	Repair Description	Labor Op Code	Op Time	Replacement P/N	Qty.
Spo. (QL) 2.4L	R	23060 2G401	0	(PI1802X1) 2.4L GDI 2WD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Pass	180114RA	8.4 M/H	21111 2GK51QGK	1
							21111 2GK71QGK	1
							23311 25050	7
							21101 2GK35QGKR	1
				(PI1802X1) 2.4L GDI 2WD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Fail, KSDS Wire Harness Install	180114RF	8.9 M/H	21111 2GK51QGK	1
							21111 2GK71QGK	1
							23311 25050	7
							21101 2GK35QGKR	1
							91400 2T010QGK	1
				(PI1802X1) 2.4L GDI AWD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Pass	180114RC	8.7 M/H	21111 2GK51QGK	1
							21111 2GK71QGK	1
							23311 25050	7
							21101 2GK35QGKR	1
				(PI1802X1) 2.4L GDI AWD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Fail, KSDS Wire Harness Install	180114RH	9.2 M/H	21111 2GK51QGK	1
							21111 2GK71QGK	1
							23311 25050	7
							21101 2GK35QGKR	1
							91400 2T010QGK	1
Spo. (QL) 2.0L T	R	23060 2G401	0	(PI1802X1) 2.0L T-GDI 2WD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Pass	180114RD	8.4 M/H	21111 2GK52QGK	1
							21111 2GK72QGK	1
							23311 25050	7
							21101 2GK39QGKR	1
				(PI1802X1) 2.0L T-GDI 2WD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Fail, KSDS Wire Harness Install	180114RI	8.9 M/H	21111 2GK52QGK	1
							21111 2GK72QGK	1
							23311 25050	7
							21101 2GK39QGKR	1
							91400 2T010QGK	1
				(PI1802X1) 2.0L T-GDI AWD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Pass	180114RE	8.7 M/H	21111 2GK52QGK	1
							21111 2GK72QGK	1
							23311 25050	7
							21101 2GK39QGKR	1
				(PI1802X1) 2.0L T-GDI AWD Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Fail, KSDS Wire Harness Install	180114RJ	9.2 M/H	21111 2GK52QGK	1
							21111 2GK72QGK	1
							23311 25050	7
							21101 2GK39QGKR	1
							91400 2T010QGK	1

SUBJECT: ENGINE REPLACEMENT INSTRUCTIONS FOR DTC P1326 (PI1802W/X)

Model	Claim Type	Causal P/N	Qty.	Repair Description	Labor Op Code	Op Time	Replacement P/N	Qty.
Opt. (JF) 2.4L	R	23060 2G401	0	(PI1802X1) 2.4L GDI Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Pass	180113RA	8.4 M/H	21111 2GK51QGK	1
							21111 2GK71QGK	1
							23311 25050	7
							21101 2GK34QGKR	1
				(PI1802X1) 2.4L GDI Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Fail, KSDS Wire Harness Install	180113RF	8.9 M/H	21111 2GK51QGK	1
							21111 2GK71QGK	1
							23311 25050	7
							21101 2GK34QGKR	1
							91400 2T010QGK	1
Opt. (JFa) 2.4L	R	23060 2G401	0	(PI1802X1) 2.4L GDI Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Pass	180A33RA	8.4 M/H	21111 2GK51QGK	1
							21111 2GK71QGK	1
							23311 25050	7
							21101 2GK34QGKR	1
				(PI1802X1) 2.4L GDI Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Fail, KSDS Wire Harness Install	180A33RB	8.9 M/H	21111 2GK51QGK	1
							21111 2GK71QGK	1
							23311 25050	7
							21101 2GK34QGKR	1
							91400 2T010QGK	1
Opt. (JFa) 2.0L T	R	23060 2G401	0	(PI1802X1) 2.0L T-GDI Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Pass	180A33RC	8.7 M/H	21111 2GK52QGK	1
							21111 2GK72QGK	1
							23311 25050	7
							21101 2GK32QGKR	1
				(PI1802X1) 2.0L T-GDI Engine Seized / Severe Knocking, Techline Authorized Engine Replacement, KSDS Wire Harness Inspection Fail, KSDS Wire Harness Install	180A33RD	9.2 M/H	21111 2GK52QGK	1
							21111 2GK72QGK	1
							23311 25050	7
							21101 2GK32QGKR	1
							91400 2T010QGK	1

NOTE: Refer to Warranty Bulletin 2018-10 for details regarding coolant and substitute transportation reimbursement requirements.

Old part number 91400 2T000QGK has been superseded by new part number 91400 2T100QGK. See Parts Bulletin 91-914 0003 for details.

Use sublet code 'X3' with a maximum allowed amount of $19.80 for "ENGINE R&R" engine oil reimbursement.

If the replacement of the Oil Cooler Tube Assembly was required, please manually enter the applicable Oil Cooler Tube Assembly part number to the claim's related parts section.

Dispose of old parts in accordance with local, state, and Federal regulations.

★ NOTICE

VIN inquiry data for this repair is provided for tracking purposes only. Kia retailers should reference PI1802W/X* when accessing the WebDCS system.

Appendix 1 (Warranty Claim Authorization)

	Scenario	Description	Action Required
1	Campaign - TSB # PI1802W/X Case for Warranty Authorization **NO INSPECTION**	Wiring Signal Interference Check cannot be completed due to engine seizure or other engine failure (won't run long enough to complete the test)	**TL PWA required for all dealers – Video of condition and WRTY143 form required*** Video requirement examples below are for illustration purposes, individual requirements will vary based upon the condition reported: • Video should be continuous and show the VIN (most convenient VIN plate) and pan to show the engine condition • For engine seizures, attempt to turn over engine with breaker bar in video • For hole in engine block, show hole in video

Appendix 2 (Video Capture & Upload)

Capturing a video is often helpful in assisting the Kia Techline Agent in determining a proper diagnosis strategy. Once a TechLine case is open, the following procedure will guide you through the video capture and upload.

The Chrome™ browser should be used to access the Techline portal. Follow the steps below to clear the default browser if it is other than Chrome™.

For KDS Tab 10.1 Tablets:

1. Select "Settings" from the App Screen.
2. Select the "General" tab at the top.
3. Select "Default Applications".
4. If "Internet" is the default browser, select the CLEAR button.

   If "Chrome" is the default browser, further action is not required.



5. When opening the Techline portal, select "Chrome" and select Always".



For KDS Tab S2 Tablets:

1. Select "Settings" from the App Screen.
2. Select "Applications".
3. Select "Default Applications".



4. Select "Browser app".



5. Ensure "Chrome" is selected.



Setting Your Video Size to "Limit to Email"

1. Select "Camera" from the App Screen.



2. Select the Settings icon.



3. Select the Video Camera icon.



4. Ensure "Limit to email" is selected.



Attaching Video to a Techline Case

1. Open K-Support in the device Chrome™ browser or select the "Techline" button on KDS home page.

   https://ksupport.kiausa.com



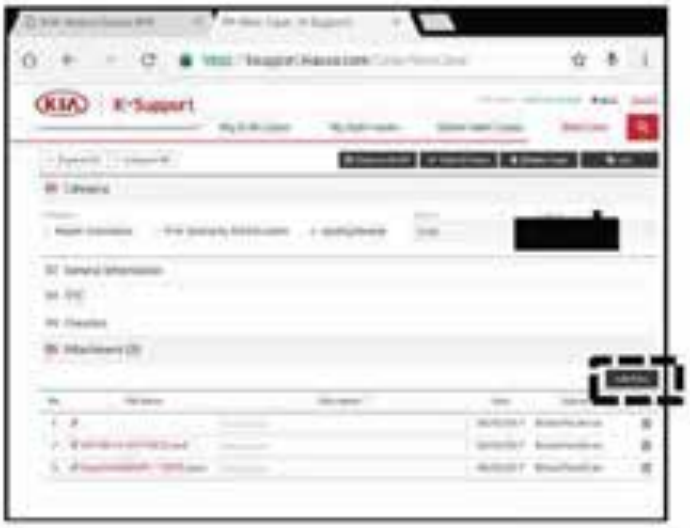
2. Open your existing Techline case for the vehicle requiring a video capture by selecting the case number.



3. Select "Attachment".



4. Select "Add Files".



5. Select "Camcorder" and the video camera will open.



6. Start by recording the VIN. Ensure sun glare is not reflecting off windows or other objects.

   Without stopping the recording, capture the area of the vehicle displaying the issue. i.e.;

   - Engine Noise – record the engine.
   - Hole In Block – record the side of the engine with the damage.
   - Seized Engine – record a technician trying to turn the engine over with a breaker bar.



*** NOTICE**

NOTE: Ensure the video size is set to "Limit to email" (see page 31). <u>Only record the VIN and the engine exhibiting the concern.</u> Any additional information will increase the size of the video and make it difficult to upload or download.

7. Stop the video when you captured what is needed. Select "OK" to use this capture or "RETRY" to capture the video again.

8. Ensure a description of the recording. For example, engine knock or smoke from exhaust.

9. Select "Submit Case".



10. Select "Yes" when the confirmation message below appears.

    Note: Selecting anything other than "Yes" will not save the video capture.

