



# TECH TIMES

2015 • VOLUME 18, ISSUE 3

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## KIA TECHLINE UPDATE AND SURVEY RAFFLE

Kia Techline is doing well and GROWING!! We now have 15 agents to serve you and we have recently expanded our Saturday coverage to two agents so we are able to better assist you with diagnosing and repairing your customer vehicles. In case you didn't already know, our average response time to answering a web case has decreased to less than 21 minutes and our phone response time has decreased to 16 seconds!

We want to hear from you. Kia Techline values your feedback and will use it to identify areas where we can further improve. Kia Techline is sponsoring a quick Satisfaction Survey when closing your case and a chance to win a \$500 Master Card Gift Card! Three winners will be randomly selected and you will be notified via email if you are a winner. The more surveys you complete, the better your chances of winning. Survey starts July 1st, 2015 and ends September 30th, 2015.

Good Luck!!

**To participate in the raffle and have a chance at winning, please do the following...**

1. Log into the Techline web portal and select "Close Case" ① from the Techline menu.
2. Select the case number you wish to close and hit "Close Case" ① again.
  - A pop up window will appear asking if you would like to participate in the survey.
3. Click the "Yes" ② button.
4. Answer the 5 questions and hit "Submit Survey Feedback" ③.
5. Click the "OK" button and you will automatically be entered to win.



### Program Rules

Must be a Kia technician employed at a Kia Dealer and working with Techline on a Repair Assistance case where assistance was provided. This will only be open to Technicians that have existing Repair Assistance cases. If the case does not get closed by September 30th then they are excluded from this raffle. It is the technicians' responsibility to close their open Techline cases once assistance has been provided and the vehicle is repaired.

## TECHLINE FAQS

QUESTION	ANSWER
How do I determine if the vehicle is a SULEV or ULEV for programming SC114?	The emissions label contains the identification for emissions certification found under the hood in the engine compartment.
Where can technicians find KDS training materials and User's Manuals?	Please refer to the KGIS home page and select "KDS and GDS Information" link located on the left navigation sections under "Quick Links" to see all related documents and instructions.
Where can I find Warranty Bulletins?	Go to "KDealer.com" and select the "Fixed Ops" tab. Once in Fixed Ops, select "Warranty" and then select "Warranty Bulletins". All bulletins will be displayed. It is very important that all technicians review Warranty Bulletin 2014-09 and become familiar with the Techline PWA program.
I am unable to complete ACU coding of a new SRSCM after replacement on a vehicle that was in a collision. What do I do?	This is actually due to a concern that is likely still in the system. Either a disconnected or faulty component. Reference the article in Tech Times Volume 16 Issue 1, page 4 for the procedure to retrieve the information code. Correct the concern related to the information code; once repaired, proper ACU variant coding can be performed.

## LATEST TECHNICAL SERVICE BULLETINS, SERVICE ACTIONS AND CAMPAIGNS

<b>ELE 090</b>	"C" State Error Message on Version 8.5 Map Update (Multiple Models)
<b>SC 121</b>	Stop Lamp Switch Replacement (2011MY - KM)
<b>GEN 051r5</b>	Navigation Map Upgrade - Customer Retail (Multiple Models)
<b>ENG 147</b>	Data Collection: Extract California Emissions Data From ECU (DC 1501) (Multiple Models)
<b>ELE 079</b>	Navigation Unit Software Upgrade (2015MY PS EV)
<b>ELE 089</b>	Navigation Head Unit SD Card Replacement (All Models Equipped w/Navigation)
<b>BOD 093</b>	Second Row Seat Inoperative Or Difficult To Release (2011 - 2013MY XMa)
<b>ELE 065r1</b>	12V And High-Voltage (HV) Battery Receiving Inspection And In Storage Maintenance (2015 - PS EV)

### CAUTION

Vehicle servicing performed by untrained persons could result in damage to the vehicle.

### WARNING

- Vehicle servicing performed by untrained persons could result in injury to those persons or to others.
- Always take proper and necessary safety precautions when performing any type of service on a vehicle.
- The Kia technician newsletter (Tech Times) is intended for use by professional Kia automotive technicians only. It is written to inform technicians of conditions that may occur on some vehicles. Trained Kia technicians have the equipment, tools, safety instructions, publications and expertise to help perform the job correctly.

### NOTICE

The topics covered in this newsletter are designed to assist you with the diagnosis and repair of specific vehicle conditions. Just because a condition is described in this newsletter, do not assume that it applies to your vehicle, or that your vehicle will have that condition. In all cases, the procedures in the applicable Service Manual and/or Electrical Troubleshooting Manual or on KGIS should be performed first.

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## STAY FOCUSED ON CERTIFICATION AND EARN REWARDS IN 2015



**elite**  
CERTIFIED



A new year of Elite Certification is underway! Get started today at [KiaUniversity.com](http://KiaUniversity.com), and stop back often throughout the year to keep up with available courses. This year, your Elite Certification achievements come with a new kind of award: an Amazon.com Gift Card!\*

You'll find all the details in your **2015 Kia University Elite Certification Program Guide** arriving in your inbox soon!

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### BEFORE CONTACTING TECHLINE

Many articles have been written about "when to contact Techline". All of these include;

- When all normal repair resources have been used (i.e., Service Manual, TSB's, Tech Times, KGIS, GDS, Kdealer.com, Shop Foreman, etc.)
- Vehicle is in for the second repair attempt, including any time the vehicle is in for the second repair for the same concern.
- Greater than ½ hour diagnostic time without being able to find the source of the problem.
- Before contacting Techline, have the needed information handy.
- Customers concern – what, when, where, and how it happened
- Explain how the customer's concern was verified. Make sure to include DTC's, freeze frame data, compression and leak down test results (if applicable), road test results, etc. Not just what test was performed but also the results of each test.
- What resources have been used – Look on KGIS – Service Information and TSBs, PitStops, etc.

Here is a list of Techline DOs and DON'Ts that can help streamline the process:

#### DO:

- Research thoroughly before opening a case (read all the available service material)
- Be very descriptive
- Tell them everything, be honest
- Do what is asked by the Techline staff

- Call Techline directly if no response after 15 minutes
- Use the comeback sheet to verify concern still occurs and document previous repairs
- Close cases and complete the satisfaction survey

#### DON'T:

- Click submit more than once on the web portal
- Call if the vehicle is not there
- Call just to ask (i.e. – have you seen this problem before?)
- Call if not properly trained or have no experience with the vehicle or system
- Use the survey as a forum to vent
- Forget to follow up and don't forget to close case promptly

Most importantly remember that the technician is asking for technical assistance, and from an agent that doesn't know the technician personally, he doesn't know technicians skill level and abilities.

The agent can't see, feel, hear or touch the vehicle. The agent only knows what the technician tells him, and the information that is provided.

Imagine if the roles were reversed, and the technician was the one providing assistance, trying to fix a vehicle... over the phone!

Following these tips will insure a speedy resolution and successful completion of the shared goal, repairing the customer's vehicle!

## TECHNICIAN BASICS COMING SOON!

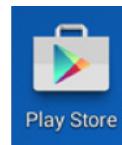
Along with the new and upcoming KGIS "Enhanced Search" feature that is due to be released later this year, Kia University is also working on a new service information section called "Technician Basics". This information covers basic procedures technicians need to know when working on customer vehicles, from basic engine diagnosis to electrical diagnosis. Technician Basics was created as an aid to help technicians if a little help is needed remembering how to perform certain procedures. Below is a preliminary example of the new Technician Basics information.

## PRINTING WITH THE KDS TABLET

Many of the newer "wireless ready" printers on the market will work with the KDS. If the service department already has a wireless printer, check to see if an APP is available for the printer. If the service department is looking to purchase a new wireless printer, check for an APP before selecting a printer.

### To find an App for a printer

1. Select the "Play Store" from the app on the tablet



2. Search for "Printer App"



3. Select a printer app



### 4. Select the "Read More"



Included in this information is a list of printers that this app supports. After matching an app to the printer, install the app.

**Supported Printer/MFPs Model List**

- \* M2020/M2070 Series
- \* C410/C460 Series
- \* CLP-300/310/320/350/360/610/620/660/670/680/770/775 Series
- \* CLX-2160/2161/3160/3170/3180/838e/854x/9252/9352/92x1/93x1 Series
- \* ML-1865W/2150/2160/2165/2250/2525/2570/2590/2850/2950/3050/3300/347x/331x/371x/405x/455x/551x/651x Series
- \* SCX-1490/2000/3200/3400/4623/4x21/4x24/4x25/4x28/470x/472x/4x33/5x35/5x37/6545/6555/8030/8040/9123/9128 Series

**Supported Printer/MFPs Model List**

- \* M2020/M2070 Series
- \* C410/C460 Series
- \* CLP-300/310/320/350/360/610/620/660/670/680/770/775 Series
- \* CLX-2160/2161/3160/3170/3180/838e/854x/9252/9352/92x1/93x1 Series
- \* ML-1865W/2150/2160/2165/2250/2525/2570/2590/2850/2950/3050/3300/347x/331x/371x/405x/455x/551x/651x Series
- \* SCX-1490/2000/3200/3400/4623/4x21/4x24/4x25/4x28/470x/472x/4x33/5x35/5x37/6545/6555/8030/8040/9123/9128 Series

## JOE'S CORNER - DO FRET THE SMALL STUFF (TERMINAL CORROSION)

Did you ever hear the saying "Don't fret (sweat) the small stuff." Well that has changed!

With the increased number of electrical systems, options, and owner-desired features, we are using electrical connectors with more circuits and smaller terminals. Under certain conditions, terminals may end up with a condition known as "FRETTING CORROSION". So now, we have to fret the small stuff.

Fretting corrosion is a build-up of nonconductive oxidation between the male and female terminals in a connector. It results from thermal expansion and contraction, micro-motion of the terminal from vibration, and terminal tension.

Customer concerns may include:

- Intermittent no start
- Intermittent lights and messages in the cluster
- CAN line communication problems
- Multiple unexplained DTCs

CAN lines are extremely sensitive to this condition due to low voltage and low current.



The example above is the C-CAN line on an Optima Hybrid that had an intermittent fault. As you can see, the image on the left is electrical noise on the C-CAN line when gently moving a harness connector and the fault occurs. The image on the right shows normal C-CAN communication.

To help isolate the condition, gently wiggle connectors at each Engine Management sensor, main harness connections (A Pillar) and any other location that you can access in an attempt to duplicate the condition.

Do not disconnect and reconnect any connectors, as this will temporally repair the customers concern but the condition will return.

For fretting corrosion to occur, pin fit does not need to be loose. If you check the pin fit, you will find that it is good.

When you have located the connector that is causing the problem, the best solution is coating the male terminals with "STABILANT 22A". Yes, we all have heard of it but how many of us use it. Yes, it is expensive "BUT IT WORKS!" Do not use any aftermarket terminal cleaner-lubrication type products. They may work temporarily but can cause greater problems in the future. STABILANT 22A is the only product that is recommended by Kia Motors America! See PITSTOP (PS116) for more information.

Use the applicators that come with the product and apply a very small amount to each male terminal in the connector. Due to the wicking action of STABILANT 22A just thinly coat the terminals and allow to air dry for at least five (5) minutes so the alcohol can evaporate before reassembly.

### Only order STABILANT 22A

STABILANT 22A contains "Isopropyl Alcohol" which allows it to have good flow characteristics when applied to electrical terminals.

### 15ml Stabilant 22A



In conclusion, if you have intermittent concerns that you can duplicate and by using the VMI scope function of the GDS/KDS, you can isolate the fault, applying STABILANT 22A to the male terminals will make the contacts greatly more reliable, eliminating costly comebacks and ensuring customer satisfaction.

## DIFFICULTY ASSEMBLING STRUT BEARING/INSULATOR ON 2011 - 2015MY OPTIMA (QF/TF)

This article provides information on some 2011 - 2015MY Optima (QF/TF) vehicles, when replacing the strut insulator or strut bearing with new parts, you may encounter difficulty installing the new strut bearing into place on the insulator. This condition is due to a change in the design of the strut bearing (A) which results in tighter tolerances between the bearing and insulator. Refer to the procedure below detailed assembly and disassembly procedures.

### Assembly and Disassembly:

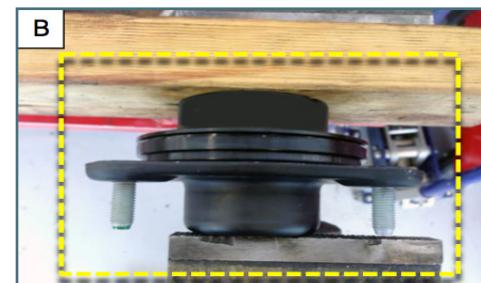
- To install a new design strut bearing, use a bench vice to apply even pressure around the entire bearing diameter until it snaps into place on the insulator (B). **NOTE: be sure to use a block of wood or other suitable material to avoid damaging the plastic surface of the strut bearing.**
- To remove a new design strut bearing for replacement, use a large flat blade screwdriver to apply even pressure at several places around the circumference of the strut bearing.

**Note: parts are interchangeable but will require additional force to assemble, as explained above.**

### PARTS INFORMATION

Original P/N	New P/N
54612 3S000	54612 3S050

Please refer to PitStop PS 414



## TEST YOUR TECH TIMES KNOWLEDGE

Test your knowledge of the articles in this issue of Tech Times: unscramble each word on the right using the clues on the left.

1. The power in this component is absorbed and released as current changes direction?
2. When calling into Techline, one of the best things to be?
3. CAN line connectors are extremely sensitive to this condition due to low voltage and low current?
4. Voltage gets boosted inside the inverter by?
5. This publication was created to assist technicians if they need a little help?
6. To better serve technicians, Techline agents have increased to?
7. To use 115 electrical outlets, this component can only be operated when the vehicle is running?
8. Use this sheet to verify concern still occurs and document previous repairs?
9. The addition of this accent should not be considered a mis-build?
10. This type of oxidation causes a condition known as Fretting Corrosion?
11. The correction of this code will allow for proper ACU variant coding?
12. When installing an updated strut bearing/insulator, it is best to use a block of wood or suitable material to avoid damaging?



**T P I C R A C O A**

**S O T H N E**

**T E F T G R N I**

**S M O R N T E R A F R**

**N H A I C N E T I C C S B S A I (two words)**

**E F T E I N F**

**T R V E N R I E**

**A B M C O E K C**

**O P N I A C A K B L (two words)**

**O N I U V N C E O D N T C**

**R F N I M T O N I A O**

**S T A L I P C F R C S E A U (two words)**

Answers to the word scramble are found on page 10.

**2015 SEDONA POWER INVERTER AND 115 VOLT ELECTRICAL OUTLET**

The new 2015 Sedona is available with an option that supplies 115 volts in the vehicle.

There are times when it would be nice to be able to power up a 115 volt device in the car. The inverter is designed to convert the vehicle's 12-volt DC power to 115-volt AC.

The A/C inverter supplies 115 Volts/100 Watts of electric power. The electrical outlets are located on the back of the center console and passenger rear cargo area (Fig. 1).

The inverter can only be operated while the engine is running. Once the inverter is turned on, the LED in the switch remains "ON" until the switch is turned "OFF".



FIG. 1 KIA Sedona A/C Inverter switch and 115 Volt outlets

The Power Inverter system includes a power inverter, switch, and electrical outlet (Fig. 2).

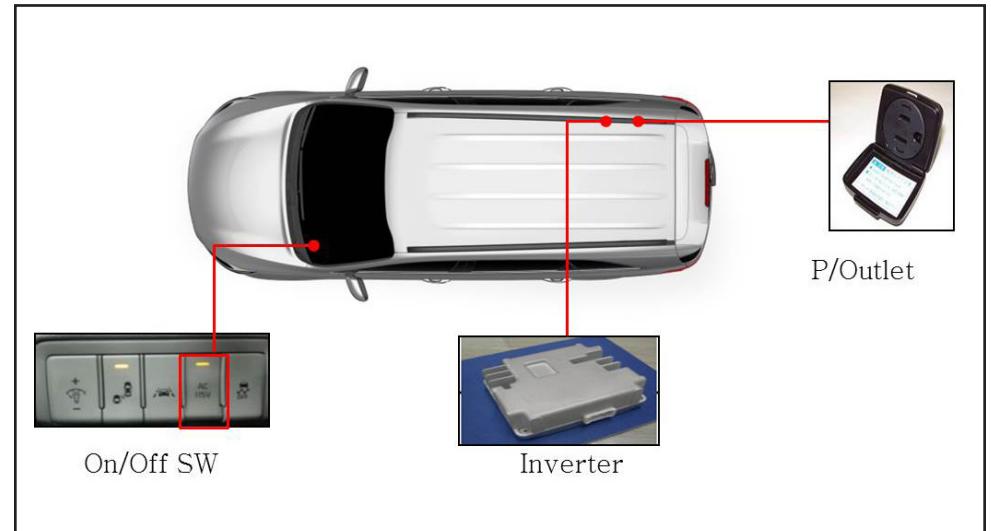


Fig. 2 Component Locations (Sedona Shown)

## How an Inverter Works

The inverter is fed 12 volts through a 30-amp fuse in the engine room fuse box (see Fig. 3). The 12 volts run the transformer inside the inverter to boost the voltage to 115.

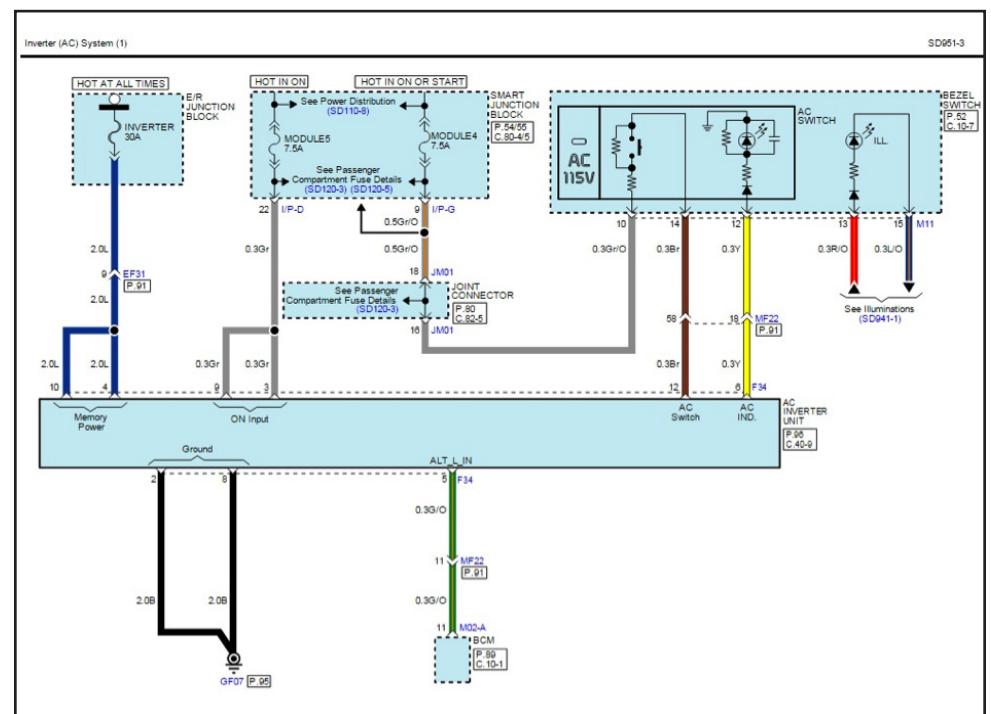


Fig. 3 Sedona Power Inverter Wiring Diagram (not all system diagrams shown)

## 2015 SEDONA POWER INVERTER AND 115 VOLT ELECTRICAL OUTLET (Continued)

### How an Inverter Works (Continued)

The transformer does not change the voltage from DC to AC. That requires additional circuitry which includes an oscillator circuit. The major advantages of oscillator circuits are that they are not electrically noisy, and they produce a cleaner sine wave. Unlike household AC current, the inverter produces an AC square wave.

The square wave needs to be filtered to turn it into something that resembles a sine wave. This is done by using a capacitor. The capacitor is used to absorb and release power as the current changes direction. It takes time for capacitor to charge and discharge which rounds off the square wave to form a AC sine wave.

### Inverter System Diagnosis

The inverter system is designed to aid the technician in diagnosing any system concerns by monitoring the status of the LED light in the switch. The inverter protection function table below provides an overview of how the system reacts depending on the fault.

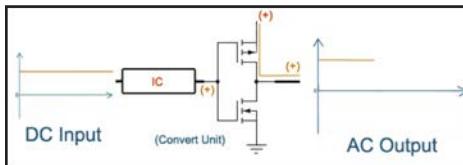


Fig. 4 Power Inverter Diagram positive AC wave portion

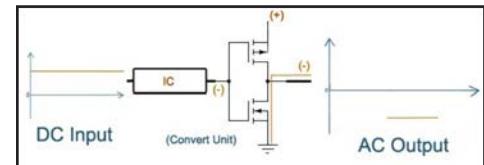
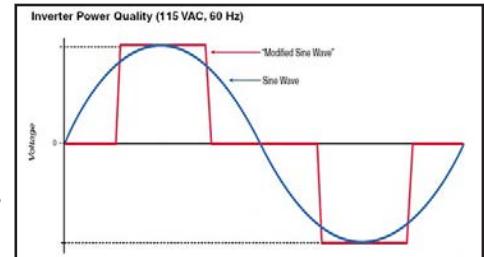


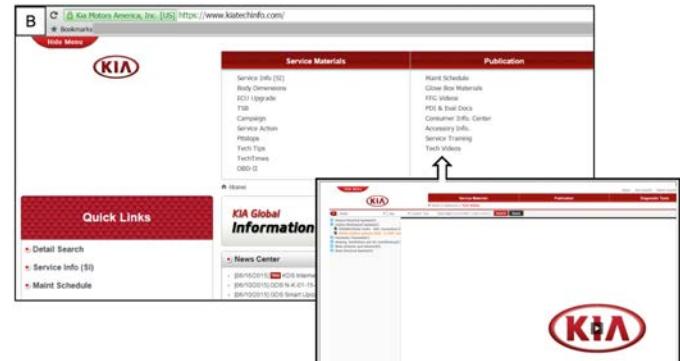
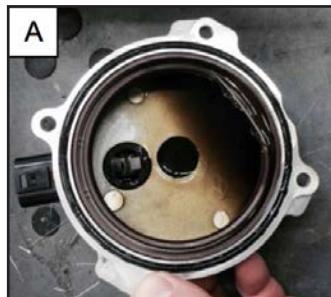
Fig. 5 Power Inverter Diagram negative AC wave portion



CONCERN	CONDITION	LED STATUS
Under voltage protection	Shuts down for voltage lower than 11.3 volts $\pm$ .3 volts	LED Flashes
	Resumes operation at 12.2 Volts $\pm$ .3 volts	LED ON
Over voltage protection	Shuts down for voltage higher than 15.5 volts $\pm$ .3 volts	LED Flashes
	Resumes operation at 15.5 Volts or below $\pm$ .3 volts	LED ON
Over heat protection	Shuts down inverter if temperature exceeds 105°C (221°F) $\pm$ 10°C ( $\pm$ 50°F)	LED Flashes
	Resumes operation at 95°C (203°F) $\pm$ 10°C ( $\pm$ 50°F)	LED ON
Over current protection	Turns off when over current at set point is detected	LED ON
	Inverter stops for 10 seconds before restarting	LED Flashes
	Turns off when over current is detected 3 times (turn A/C inverter switch on again to turn on the system)	N/A
Short Circuit protection	The inverter shuts down if there is a short circuit between AC1 & AC2 circuits during operation.	LED OFF
Under/Over voltage shutdown protection	Shuts down when vehicle voltage is below 10.7 volts $\pm$ .3 volts	LED OFF
	Shuts down when vehicle voltage is above 16.5 volts $\pm$ .3 volts	LED OFF

## OIL INTRUSION INTO E-CVVT COVER ON 2016MY SORENTO (UMA)

When diagnosing a DTC related to the E-CVVT system on a 2016MY Sorento (UMa), check the E-CVVT cover for possible oil intrusion. The E-CVVT system utilizes two seals to prevent intrusion of oil and/or dust - a seal on the cover (A) and a seal that is recessed in the E-CVVT. If oil is found inside the cover; the cover, the oil seal within the E-CVVT assembly and the E-CVVT assembly should be replaced. Follow the instructions listed in the Service Information, and in the video link below, to properly install the oil seal to the correct depth and align the cover. **NOTE: Cover and Motor Plug Installer Special Tool (P/N 09243 C1000) must be used for this procedure.**



### 2016 Sorento (UM - E-CVVT Cover & Motor Plug Installer)

To view a video on your mobile device, snap this QR code

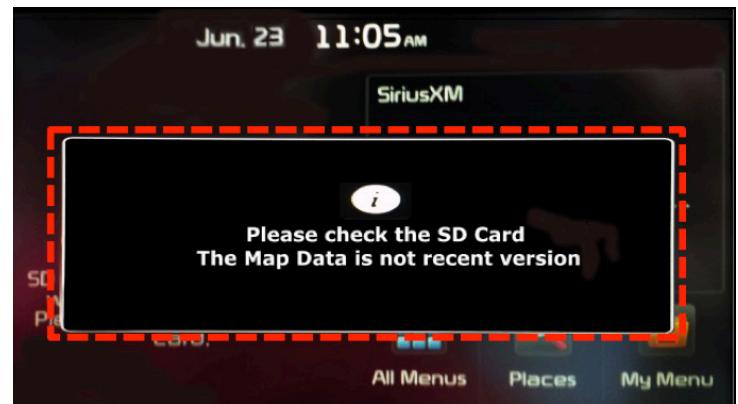


## NAVIGATION HEAD UNIT SD CARD REPLACEMENT

This article describes the SD Card exchange/replacement procedure related to error messages that may be displayed on the Navigation screen when the incorrect SD Card is inserted. **Note: Only new models (during PDI inspection or at the point of purchase) or compatibility mismatches that occur after head unit replacement will be considered for this program.**

An example of the error messages that may be displayed on the navigation screen are shown below:

- GEN3.0 - Please check the SD card The Map data is not recent version
- GEN4.0 - Navigation is currently unavailable. Please check the SD card
- Premium Gen 2.0 - Navigation is currently unavailable. Please check the SD card



### NOTICE

The Error Message on the screen may vary by AVN Generation. Note the content of the error message and provide it when opening a Techline case.

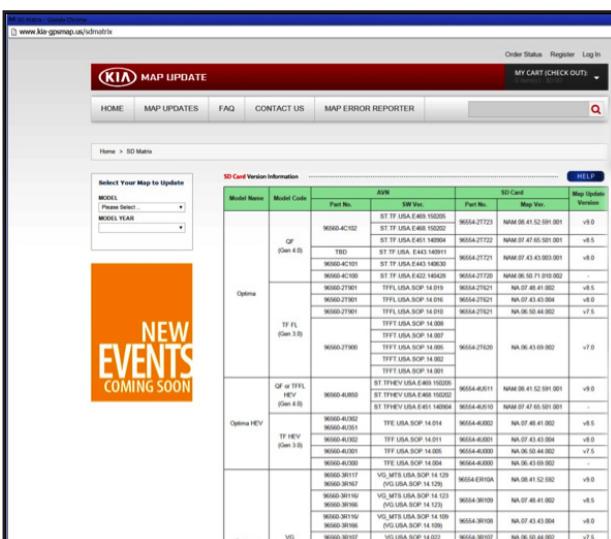
If the Navigation system displays an **error message** with the words SD Card or Map in the description of the message, the Navigation system has identified a mismatch of the head unit s/w with the inserted map version.

**Navigation or SD Card replacements for the incorrect handling of delivered parts are NOT covered under warranty.** In all mismatch cases, MnSOFT can assist with identification of the correct matching SD Card and, in certain cases, complete a replacement through this program.

1. If an error message is shown on the navigation head unit display, contact Kia Techline and open a case.
2. Kia Techline will use the table shown below to identify the following information:
  - a. SD Card part number that matches the model/year of the vehicle
  - b. Map database version that matches the software of the head unit software
3. If you have a suspect SD Card that does not work when tested in a second vehicle, Kia Techline will contact MnSOFT to request an exchange of the affected SD Card.
4. Enclosed in the delivery package will be a return shipping label for the old SD Card. Make sure to return the affected SD Card using the included shipping label.
5. To request an exchange of the affected SD Card, provide Techline with the following information:
  - Dealer Code
  - Shipping Address
  - Name of Service Manager and direct contact number (cell phone).
  - VIN
  - AVN P/N
  - An image of S/W version number from the navigation head unit (Setup > Main > System Info).
  - An image of the affected SD Card
6. In cases where the SD Card is missing from the vehicle or has been lost, the dealership must purchase a replacement card.

To purchase a replacement SD Card, refer to the contact information shown below.

Call: 888-757-0010 or email: [contact@kia-gpsmap.us](mailto:contact@kia-gpsmap.us)



<http://www.kia-gpsmap.us/sdmatrix>

Please refer to TSB ELE 089

## ADDITION OF PIANO BLACK ACCENTS ON 2016MY SORENTO SXL MODELS

This article provides information regarding a running production change that has been made to the 2016MY Sorento (UMa), SXL trim ONLY, to include piano black accents on the front driver and passenger seat backs and on the shift knob. This change has been implemented on vehicles produced on or after February 9th, 2015. **NOTE: vehicles produced before this date will not include these changes and these vehicles should NOT be considered "mis-builds".**



Please refer to PitStop PS 409

## TEST YOUR TECH TIMES KNOWLEDGE SOLUTIONS

We hope you gave this issue's word scramble on page 6 a try. In case you need a little help, here are the answers to the word scramble.

1. CAPACITOR	5. TECHNICIAN BASICS	9. PIANO BLACK
2. HONEST	6. FIFTEEN	10. NONCONDUCTIVE
3. FRETTING	7. INVERTER	11. INFORMATION
4. TRANSFORMER	8. COMEBACK	12. PLASTIC SURFACE

