



# TECH TIMES

The Professional Publication for Kia Dealership Technicians & Service Staff

2014

Volume 17, Issue 6

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## Kia Diagnostic System (KDS) Introduction

This bulletin provides information relating to the introduction of KDS, the first mobile based diagnostic tool for Kia vehicles. To offer the best possible service experience for your customers and to achieve world-class "Fix It Right The First Time" service performance, Kia introduces the All-new KDS.

It delivers:

- improved diagnostic software for enhanced troubleshooting procedures
- tablet based, mobile capabilities
- high speed vehicle communications
- on-line access to service information

The KDS integrates state of the art technology with wireless internet (Wi-Fi) and VCI Bluetooth connectivity that will allow Real-Time internet access and download.

KDS will start arriving at Kia dealerships the beginning of November.

### KDS Benefits

- Advanced function (Multi-Data analysis, Advanced Vehicle Selection, etc.)
- Support FlexRay protocol for ECU Upgrade
- Service Information updated through internet

### New Technology and Improved Functions

- Automatic software update via Wi-Fi
- Supports full wireless connection through Wi-Fi direct, Wi-Fi and Bluetooth
- Multi-Data Analysis allows for multiple module current data item selection
- Quick menu helps to move to the relevant diagnostic system quickly

#### Simple Internet Update

• One Touch Update Process

#### Wireless Communication

#### Convenient Function

Graph Zoom In & Out

Capture & Memo

Service Info. Zoom In & Out

### KDS System Dealership Requirements

To assure quality vehicle repair through access to the appropriate service information and diagnostic capabilities, Kia dealerships are required to have at least one (1) KDS system.

The number of KDS systems per dealership is based on the dealer's Business Operating Plan (BOP). Consult with your dealer Principal or General Manager for BOP details. Please review this table for your dealership's REQUIREMENTS.

	"B" – "E" Dealers BOP < 300 - 1200	"A" Dealer BOP 1201>
<b>Total KDS Systems</b>	1	2

**For KDS and Wi-Fi Requirements, refer to Kia Diagnostic System/Dealer Wi-Fi Requirements TSB: SST 034 and TSB SST 035**

## Tech Line FAQs

Model/Year	Question	Answer
2015 K900	Missing USB sticks for Combined TSB ELE 071, how can I update Navigation Unit?	If you are unable to locate or have lost USB sticks for TSB ELE 071, you can use the available AUM tool to update the Navigation unit using the GDS.
All Models	I am working on a vehicle that is setting a DTC and I need assistance with diagnosis. How should I proceed?	It is very important when creating a technical assistance case with a particular DTC that you inform Techline which module set the DTC and if the code is active or in history so we can assist you with diagnosis. Lack of detailed case information from you will delay responses from Techline, result in multiple contacts, and may lead to mis-diagnosis.
AI Models	What should I do if the transmission is replaced on a different R.O. then was listed in the PWA case I created for approval?	Please open another Prior Warranty Authorization (PWA) case with the correct R.O. number and note the R.O. was incorrect in the previous PWA case.
All Models	I am having difficulty diagnosing a remote start system concern. Can you help?	Remote start system diagnosis assistance questions should be directed to the remote start help desk. The information needed to contact them is listed in Pitstop PS 339.
All Models	What happened to my Powertrain Warranty Authorization (PWA) case?	If you are not set up to receive e-mail notifications or if your e-mail is incorrect then you will not get a case response through Techline with your approval notice. You can go into the Techline web portal, login and use the "Case Search" feature to find the case with your approval. The actual PWA approval number will be found in WEB DCS in the allowed claims list. If you do not have a copy of the WEB DCS bulletin 2014-09, have your service manager or warranty administrator print one out for you. Note: Check your profile on KDealer.com to make sure the correct e-mail address for you is on file.
All Models	Quite often when Techline requests F.F.D. (when dealing with a MIL/DTC concern) the technician does not know what F.F.D. stands for.	F.F.D. stands for Freeze Frame Data which is saved if a DTC is set. It is imperative that all the F.F.D. parameters are put in into the case during case creation. This information can be entered on page 3 of the case creation process. Techline needs this information to properly analyze and assist with diagnosis.

## Latest Technical Service Bulletins, Service Actions and Campaigns

<b>ENG 145</b>	ECM Upgrade - MIL on Without DTC (SA 175)
<b>ELE 073r1</b>	Instrument Cluster Improvement (SA 176)
<b>ELE 067r1</b>	In Panel Module (IPM) Replacement - DTC C1611
<b>ELE 071</b>	K900 (KH) Navigation Unit Software Upgrade (SA 173)
<b>TRA 054r1</b>	K900 (KH) Shift Logic Improvement - TCM Upgrade (SA 174)
<b>ELE 070</b>	Navigation Unit Software Upgrade (SA 172)
<b>TRA 055</b>	Inhibitor Switch Diagnosis Upgrade
<b>ELE 062r2</b>	Navigation Unit Software Update

### 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.

The information and specifications provided in this document were accurate at the time of development. Kia reserves the right to discontinue or change specifications or design at any time without notice and without incurring any obligation.



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## Techline 2014 - 2015 Holiday Hours

CHRISTMAS	
Monday, December 22 - Tuesday, December 23	Open (Normal hours)
Wednesday, December 24 - Thursday, December 25	Closed
Friday, December 26	6:00AM to 3:00PM PST*
Saturday, December 27	7:00 AM to 2:00 PM PST*
Monday, December 29 - Tuesday, December 30	6:00AM to 3:00PM PST*
NEW YEARS	
Wednesday, December 31 - Thursday, January 1	Closed
Friday, January 2	Open (Normal hours)

\*Note: Techline staff will be limited during holiday hours. Business hours will resume to normal January 2, 2015. Schedule subject to change without notice

## 2015 Elite Certification Requirements Deadline

**To: All Dealership Service Personnel**

**Re: Elite Certification Requirements Deadline – Act Now!**

To become certified for 2015, you must complete all your requirements by December 31, 2014. Many Kia professionals are only one or two courses away from attaining certification completion! Don't wait until the last minute; achieve your goal now!

Becoming certified not only gives you the knowledge you need to help advance your career, but you also acquire the prestige of being an important asset to your dealership, and to the Kia brand! Attaining your Certification will allow you to participate in the Kia Elite programs, and is a qualifier for the annual Service Elite programs.

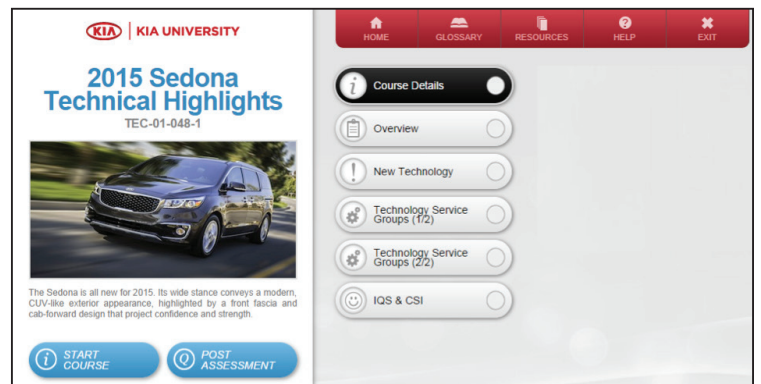
***So don't wait! The time to complete your Elite Certification requirements is NOW!***

**Thanks,  
Your Kia University Team**

## New 2015 Sedona Course Available on Kia University Web Site

Kia University is pleased to announce the new 2015 Sedona Technical Highlights web course addition which is available for dealership personnel to take at [www.kiauniversity.com](http://www.kiauniversity.com)

This web-based course is required for Service Technician's certification.



Course Title	Course Type - Code	Objectives	Est. Comp. Time	Audience	Availability Date	Certification Due Date
<b>SERVICE TECHNICAL</b>						
2015 Sedona Tech Highlights Course & Test	WEB TEC-01-048-1	• Smart Power Lift gate (SPLG) operation	1.0 hour	Technicians	9/24/2014	12/31/2014
		• New Rack Mounted Power Steering (R-MDPS) operation				
		• Engine and Transmission features				
		• Safety and Convenience systems operation				
		• Smart Cruise Control Sensor calibration				
• Lane Departure Warning System camera calibration						



# We've moved.

Have you seen the new portal?  
Please log into the new KDealer at [www.KDealer.com](http://www.KDealer.com) today!



## Kia University



## Technical Suggestions

Kia Motors America's Product Quality (PQ) Department is always looking for great ideas submitted by Kia technicians. If proven useful/effective, these ideas can even be used in TSB's, Pitstop or Tech Times articles to share field fix solutions or to assist other technicians with diagnosing the vehicle etc. If an idea or suggestion is accepted after review by the Product Quality Department, a gift card will be sent to the Kia technician who presented the idea. Such was the case with Luis Gonzales from Florida; his idea was used and later released as a TSB. Great job Luis!

Suggestions can be sent by e-mail to: mgarcia@kiausa.com

### Please provide the following information:

Model, Model Year and Suggestion including photos, P/N, with contact name, dealer code and phone number.



## TPMS Warning Data Overview

On some TPMS systems, the "Low Tire Pressure Warning Lamp" event history is recorded. When the Low Tire Warning illuminates, the event is recorded and saved in the TPMS ECU. This can be used to verify customer complaints of an intermittent Tire Pressure Warning Lamp.

Some TRW TPMS systems display the events as Warning #1 through Warning #3.

The location of Warning #1 was Sensor 3.

The Warning Data includes the tire pressure and temperature at the time of the event. In this case the cause of the event is low tire inflation.

Some Continental systems list the history as "WE" (Wheel Electronic) sensor.

Note the incorrect information – this appears to be space fillers until another event occurs.

In this case, there are no events recorded and "Not Supported" is displayed.

Sensor Name (52)	Value	Unit	Link Up
Sensor 4 Battery Level	Unknown	-	
Diagnostic LED Output State	OFF	-	
Number of Tread Warning	3	-	
Warning #1 Status	Active	-	
Warning #1 Type	Inflation	-	
Warning #1 Sensor Location	Sensor 3	-	
Warning #1 Sensor ID	30AB600	-	
Warning #1 Pressure	27	psi	
Warning #1 Temperature	64	'F	
Warning #1 Start Distance	12915	km	
Warning #1 End Distance	0	km	
Warning #2 Status	Active	-	
Warning #2 Type	Inflation	-	
Warning #2 Sensor Location	Sensor 1	-	
Warning #2 Sensor ID	30A67EF	-	
WE Pressure	0	psi	
WE Temperature	78.8	'F	
WE Information	1	-	
WE Status	130	-	
Tire Location	REAR RIGHT	-	
Ignition Cycle Count	1039	-	
Wheel Electronic Sensor	FFFFFFF	-	
WE Pressure	51	psi	
WE Temperature	419.0	'F	
WE Information	Not Supported.	-	
WE Status	Not Supported.	-	
Ignition Cycle Count	Not Supported.	-	
WE Sensor ID	Not Supported.	-	

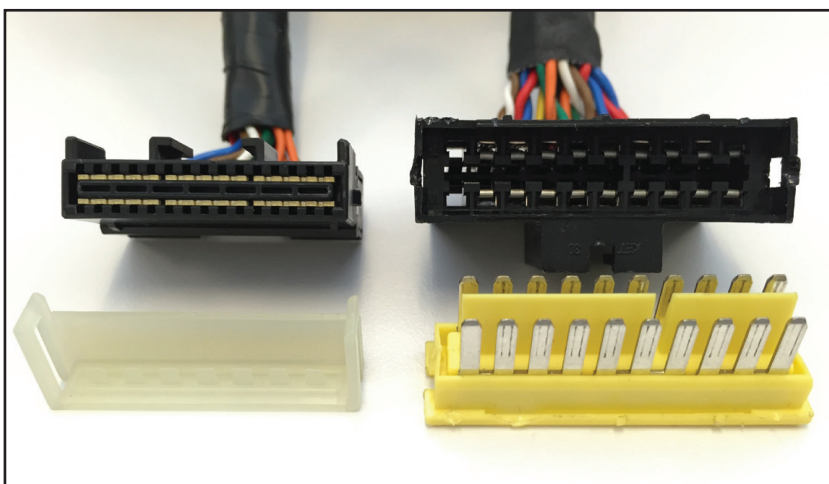
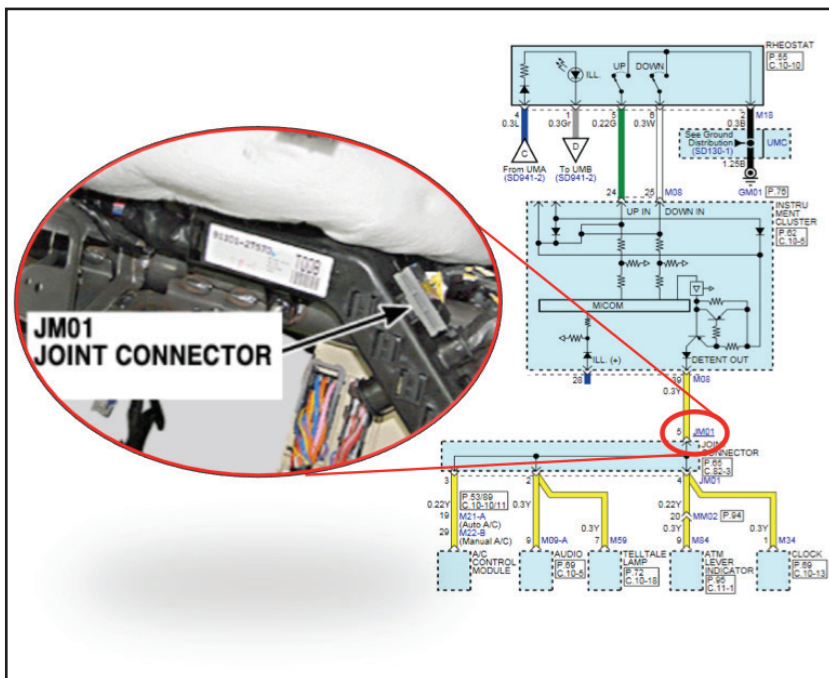
## Joint Connectors

The joint connectors are important components of the CAN communication network. They house a sets of wires and their female terminals extending from each module, or node, on the network. To join the terminals within the connector a splice-pack is used. You could think of these splice-packs as junction blocks; connecting the sets of wires together.

Joint connectors are the central connection point for all modules on the network. There can be many modules on a network and the modules can have different impedances. With various impedances, the signals from the modules would be distorted. To prevent this signal distortion the joint connector will have splice-packs of various numbers of terminals to link the like "impedance modules within the connector". By linking the modules with similar impedance characteristics signal reliability is ensured.

There are different types of joint connectors; they vary in size, shape, color and locations. For design and location information refer to the Service Information>ETM>Schematic Diagrams>System. Click on the connector number hyperlink in the schematic to view connector details, component location and harness information. In the Connector section you will find information describing the connector such as manufacturer, terminal size, number of terminals, and type. The manufacturer of the earlier style is KET and the manufacturer of the later style is AMP.

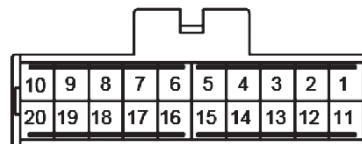
When diagnosing, the joint connector can be a source of concern and a location for diagnosing. As with any connector, there is the possibility of pin tension and contact problems and corrosion. The joint connector can also be a great place to perform electrical checks of the circuit. The terminals can be back-probed to check for signal waveforms and voltages. On some earlier versions of the connector the splice-pack can be removed for checking each module circuit to the joint connector. On these types of joint connectors the removable splice-packs have different colors. **DO NOT interchange colored splice-packs.** On later model vehicles the joint connectors cannot be easily disassembled without possible damage. On these types of joint connectors you will only be able to back-probe for signal waveforms and voltages.



Later style

Earlier style

- JM01 Joint Connector**
- 20 Female / Black (KET\_090II\_20F\_B\_JCH)
  - 1 ~ 5 : Detent
  - 6 ~ 10 : B-CAN (High)
  - 11 ~ 15 : Vehicle Speed
  - 16 ~ 20 : B-CAN (Low)



## The 7th Kia Skill World Cup Competition

2014 has been a banner year for Kia. Likewise, the 2014 Kia Skill World Cup (KSWC) competition has attracted increasing attention, growing interest, and greater following among Kia technicians world-wide. As Kia continues its growth throughout the world, Kia technician participation continues to grow so that this year's Kia Skill World Cup eclipsed prior years, welcoming 60 World Cup technicians from 43 countries.



Right to left: Ken Winders, Tom Boss, Seth Heffner & Ben Hendricks

Kia Motors Corporation (KMC) started the 2002 Kia Skill World Cup competition to show its appreciation and to honor Kia service technicians; the backbone for its after sale vehicle quality. This technician only event has greatly exceeded its promise to motivate Kia technicians who continue to provide excellent care for Kia customers' vehicles and a superb customer experience.

### The Competition

This World Cup started like every World Cup. The written test was administered on Tuesday, the first day of the competition. Then, technicians competed on these 6 practical tests, or skills tasks, on Wednesday:

1. Engine Trouble-shooting on a drivability concern
2. Chassis Repair on Automatic Transmission diagnosis
3. Electrical Trouble-shooting on-car Electrical concern
4. Engine Mechanical inspections and repair
5. Electrical system repair
6. Chassis Repair on Manual Transmission diagnosis



Ken Winders, Gene Messer Kia, Lubbock TX



Tom Boss – Kyler Kia, Grand Rapids, MI



Seth Heffner – Paramount Kia, Hickory, NC



Ben Hendricks – Dorsch Kia, Green Bay, WI

On the practical tests, three judges were responsible for a group of approximately 12 technicians. These judges evaluated and checked off specific tasks performed by technicians, making sure that proper diagnostic procedures were being followed.

In addition to observing for technical competence, judges were looking for how well technicians followed instructions, how they approached the tasks, their confidence in performing the tasks, technicians' attitude and mannerisms, and how the work station was left at the end of the practical test.

### The Cultural Experience

Even at World Cup's warp speed, technicians were treated to exquisite Korean foods and entertainment. This year's hit was the Korea Folk Village's Farmer Dance and tight rope walker. Ben Hendricks said "I've had Kimchee, but would not believe there are so many different kinds". They all chimed in that "the Korean dancers performing the Farmer Dance were very nimble, graceful, and entertaining... a performance that they would see only in Korea". But the biggest thrill came from the old man walking the tight rope. "Talk about agility... this man must be at least 70 years old and he walks, jumps, turns, and balances on this tiny rope like a teenager."

Continued next page.



## The 7th Kia Skill World Cup Competition (Continued)



Mr. Tae-Hyun (Thomas) Oh – Executive VP & COO of KMC

### The Award Ceremony

The anticipation, the thrill, and the whole purpose of competing in the 2014 Kia Skill World Cup finally arrived. This is it... to find who's taking home the Gold, Silver, and Bronze.



Left to right: Tom Boss, Seth Heffner, Ken Winders, & Ben Hendricks

Surprisingly, the ceremony started right away with the awards.

- First, the three system specialists were announced for Engine, Chassis, and Electrical.
- Next, Ken Winders heard his name as one of the 3 Bronze award winners, followed by Seth Heffner who headed to the stage to claim one of the 2 Silver awards.
- Finally, the Gold award went to a Chinese technician.

After dinner, all of the guests were treated to a spectacular light show.

Mr. Tae-Hyun (Thomas) Oh, Executive Vice President & COO of KMC, concluded the 2014 World Cup by thanking everyone; technicians and all of the guests.

Mr. Oh expressed his and Kia's appreciation as follows:

Thanked technicians for their dedication and commitment to excellence throughout the World Cup competition;

- Acknowledged Kia jump by 9 positions to 74th place in Interbrand's Best 100 Global Brands was in part due to technicians' after sale service quality
- Reinforced Kia's emphasis on putting the customer first and the technicians' role in their direct and regular interaction with their service customers
- Stated technicians are key to increasing customer satisfaction and customer loyalty by diagnosing customers' problems, finding solutions, and performing the service or repair
- Emphasized the importance for technicians to strengthen their technical fundamentals to accurately analyze the problem and Fix the vehicle Right the First Time"
- Encouraged technicians to take the leadership role to provide "true customer value through better customer experiences at the Kia dealerships"
- Congratulated the award winners and every World Cup technician as the top Kia technician in their respective country.

### After It Was All Over

So, what did America's World Cup technicians have to say about their fantastic journey?

1. Approach World Cup like you would everyday on the job.
  - a. No need to get overly excited;
  - b. Don't overthink the task and keep it simple;
  - c. Carefully read and follow the instructions;
  - d. Plan on what you are going to do before starting; and
  - e. Don't disregard your instincts.
2. Kia's 5-Step Diagnostic Process is your greatest ally. Do not miss any steps of this process because streamlining can cause you to overlook the obvious.
3. Most of all, ENJOY yourself. World Cup is one of the greatest experiences of any lifetime. It is both a great learning experience and it also exposes you to many new situations and new people from all over the world.

They were also thankful for the experience and were rewarded with two medals, bringing home a Silver and a Bronze for their efforts. Congratulations!

They all added "This is a journey of a lifetime that anyone should take advantage of given the opportunity."



## Wheel Speed Sensor Diagnosis Using The VMI And Sensor Simulation

When addressing a concern and/or a MIL lamp ON for the ESC system, a systematic approach and diagnosis of the sensors will be necessary. In this article, we will look at the sensor patterns using the VMI and also simulate the input to the ESC module to isolate our diagnosis to either a sensor, module or harness issue with the following steps (*may vary according to vehicle application*).

The first step is to use the GDS to retrieve the trouble code, in our case a DTC C1206 has set for the left rear wheel sensor on a 2014 Sorrento, indicating a loss of signal/open circuit condition. The next step would be to follow the chart and confirm that there is no input in the ESC system data list using the GDS.

The screenshot shows the GDS software interface. The 'Current Data' section lists various sensor values, including Wheel Speed Sensor-Left Front (9 MPH), Wheel Speed Sensor-Right Front (9 MPH), Wheel Speed Sensor-Left Rear (0 MPH), and Wheel Speed Sensor-Right Rear (9 MPH). The 'DTC' section shows a current DTC of C1206, described as 'Wheel Speed Sensor Rear LH Open/Short', with a state of 'Active'.

The VMI will be used to test the sensor with a “T” connector while using the oscilloscope function. There are sample patterns which the sensor output pattern should resemble, as well as typical voltages provided in the DTC diagnosis. In the oscilloscope screen, adjust the time and voltage range to match the sample patterns in the DTC information. (*See sample DTC pattern and voltages from GDS Service Information below*).

The screenshot shows the 'Specification' and 'Oscilloscope' sections. The 'Specification' table provides output voltage ranges for high and low states and the air gap. The 'Oscilloscope' section shows a waveform with a peak-to-peak voltage of 1.40 V and an average voltage of 1.29 V.

Sensor Type	Output Voltage		Air Gap
	HIGH	LOW	
Active Type	1.4V	0.7V	0.4~1.5mm

The diagnosis guide for the system states to test with a “known good part” when isolation tests determine that the sensor has failed. You will need to verify that the sensor has failed and that there is no damage to the module. The VMI in sensor simulation mode will help you to quickly and accurately help with the diagnosis of your “known good part”.

You will simulate a frequency into the module using the signal return circuit for the sensor, identified using the ETM for the affected circuit. This circuit can be accessed at an inline connection, the module or at the sensor itself to further isolate possible harness issues as well. The module should respond with an increase in wheel speed as the frequency increases.

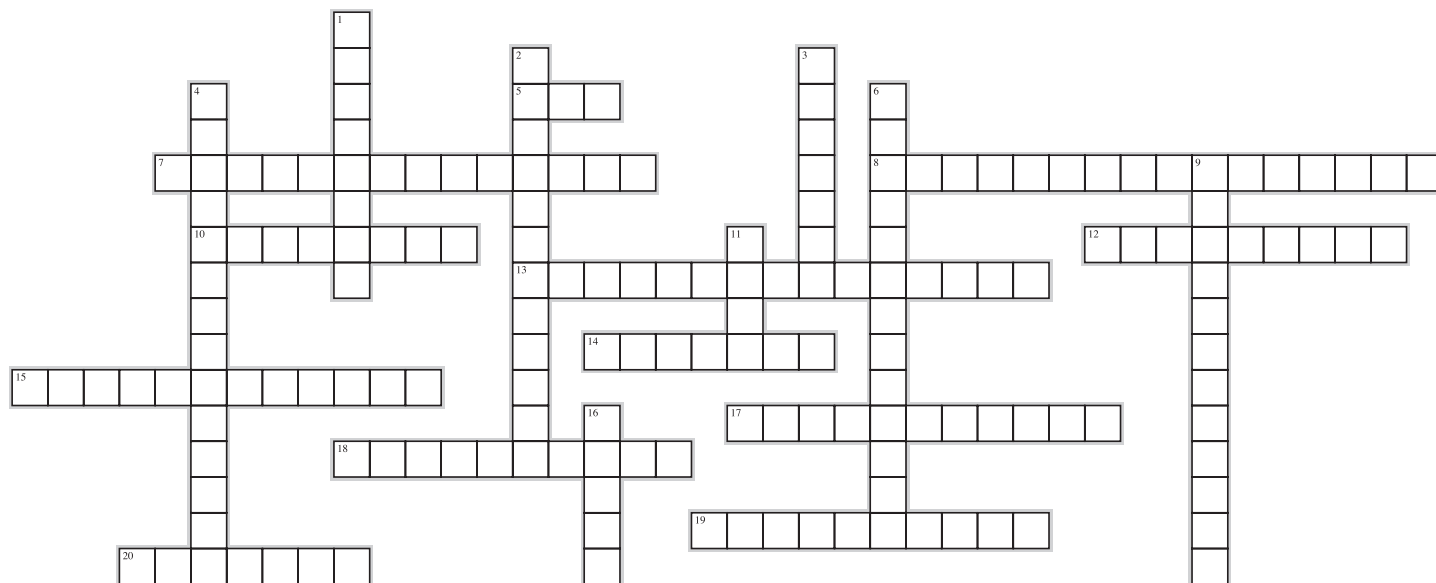


If the module responds you have verified the circuit integrity and that the module can calculate an input speed from a supplied input. If the module doesn't respond then you will need to check the integrity of the feed and signal circuits. If circuit is correct in resistance and voltage drop (per service information), then the module may also have failed (ex. possibly due to a shorted front sensor). Replace components as per service instructions and verify that the concern doesn't reoccur.

The screenshot shows the 'Simulation Test' section of the GDS software. The 'Pulse Output' section is active, showing a frequency of 250 Hz. The 'Current Data' section shows the sensor values, including Wheel Speed Sensor-Left Front (0 MPH), Wheel Speed Sensor-Right Front (0 MPH), Wheel Speed Sensor-Left Rear (24 MPH), and Wheel Speed Sensor-Right Rear (0 MPH).

## Crossword Puzzle

Test your knowledge of the articles in this issue of TechTimes by completing this crossword puzzle. The solution to this month's puzzle can be found on page 16.



### Across

5. If the POWER DOOR \_\_\_\_\_ button is depressed, the Smart Liftgate will not operate.
7. Remote commands allows for Lock or Unlock your car, start or stop the \_\_\_\_\_-\_\_\_\_\_ or start or stop a charge. (Two words)
8. The VMI in \_\_\_\_\_-\_\_\_\_\_ mode will help you to quickly and accurately help with the diagnosis of your "known good part". (Two words)
10. The module should respond with an \_\_\_\_\_ in wheel speed as the frequency increases.
12. By linking the modules with similar \_\_\_\_\_ characteristics signal reliability is ensured.
13. The \_\_\_\_\_-\_\_\_\_\_ seats in 2nd row are only available in SXL trim level. (Two words)
14. One of the two newly added features to 2nd row Executive Lounge seats is \_\_\_\_\_-\_\_\_\_\_ support. (Two words)
15. These recordings can be used to verify customer complaints of an \_\_\_\_\_ Tire Pressure warning lamp.
17. The Warning Data includes the tire pressure and \_\_\_\_\_ at the time of the event.
18. To join the terminals within the connector a \_\_\_\_\_-\_\_\_\_\_ is used. (Two words)
19. The terminals can be \_\_\_\_\_-\_\_\_\_\_ to check for signal waveforms and voltages. (Two words)
20. The KDS supports \_\_\_\_\_ protocol for ECU upgrade.

### Down

1. The Smart Liftgate will not operate if the \_\_\_\_\_-\_\_\_\_\_ is in the vehicle. (Two words)
2. In the oscilloscope screen, adjust the time and \_\_\_\_\_-\_\_\_\_\_ to match the sample patterns in the DTC information. (Two words)
3. On the oscilloscope, the vertical scale represents the \_\_\_\_\_ level.
4. Multi-Data Analysis in KDS, allows for \_\_\_\_\_-\_\_\_\_\_ current data item selection. (Two words)
6. The oscilloscope is like a very \_\_\_\_\_-\_\_\_\_\_, with the ability to show the signals behavior over time. (Two words)
9. To enable to Smart Power Liftgate, go to \_\_\_\_\_-\_\_\_\_\_ in the LCD Instrument Cluster. (Two words)
11. On the oscilloscope, the horizontal scale represents \_\_\_\_\_.
16. When the Low Tire warning illuminates, the event is recorded and \_\_\_\_\_ in the TPMS ECU.





The UVO app family is growing! With the launch of eServices on the 2014 Sorento, we introduced our first Smartphone App into the app store: the UVO eServices App. Every UVO equipped vehicle that has followed since then has been utilizing the same UVO eServices app. Until now...

### Introducing the 2015MY Soul EV Smartphone App!

The 2015 Soul EV has its own unique smartphone app, tailored specifically for the unique features offered on this vehicle. The Soul EV is the first vehicle in the Kia line that allows remote commands to be triggered from the smartphone and [MyUVO.com](http://MyUVO.com) portal. EV Services App features include:



- Remote commands: Lock or unlock your car, start or stop the climate control, or start or stop a charge.
- Vehicle Status: View real time information about your vehicle's battery, range, door locks, and climate control.
- Reservation: Schedule when your vehicle should charge and when your climate control should run.
- Parking Minder: Save the location where the vehicle parked and navigate to it later, or send the location to a friend.
- Find Charging Stations: View a map of the charging stations in your area.
- Roadside Assist: Contact Kia Roadside Assistance Program with just one click.
- Dealer Appointments: Request service appointments at EV certified dealers.

How do you find out which app you need? Simple: if you have a 2015MY Soul EV, you need the “UVO EV Services” app (Green icon). For any other UVO eServices enabled vehicle, you need the “UVO eServices” app (Red icon).



Please refer to Pitstop PS 358

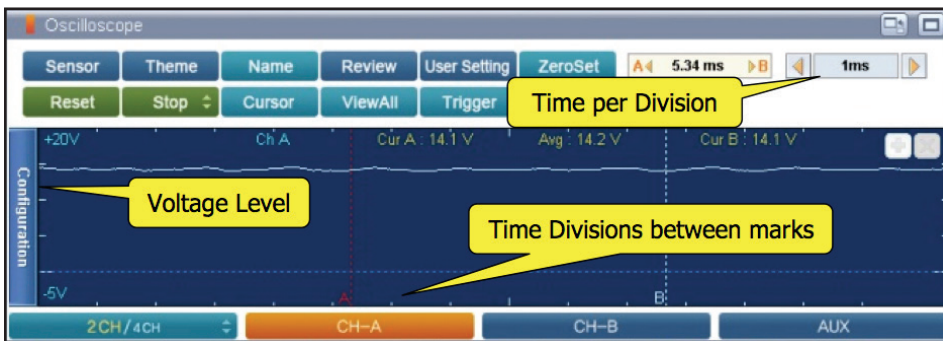
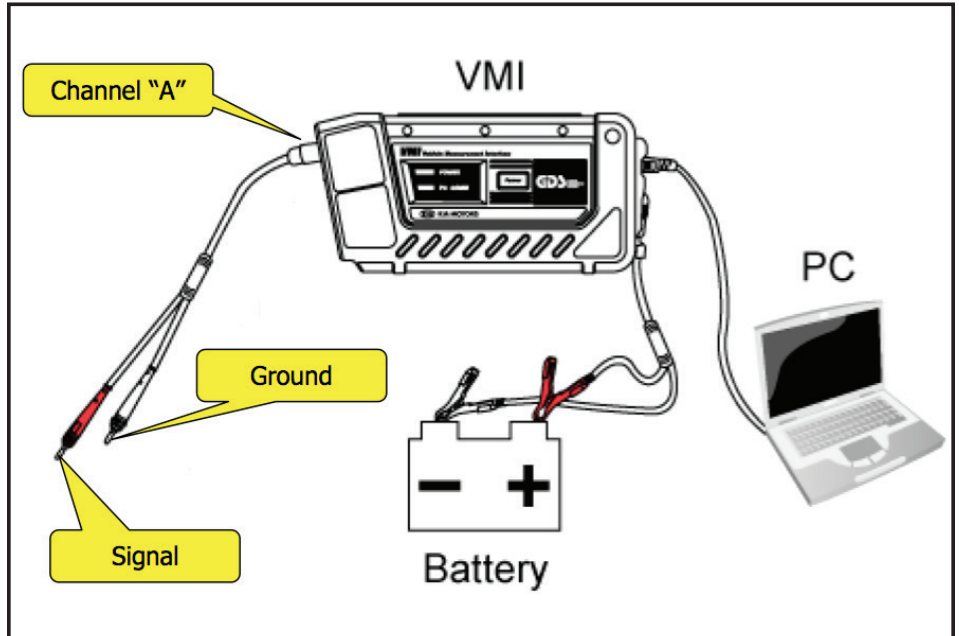
## Output Control Circuit Testing Part 2

In part 1, we covered testing circuits with a DVOM

In part 2, we will use the VMI oscilloscope with the GDS for testing circuits with constantly changing voltage levels. The oscilloscope is like a very fast voltmeter, with the ability to show the signal's behavior over time

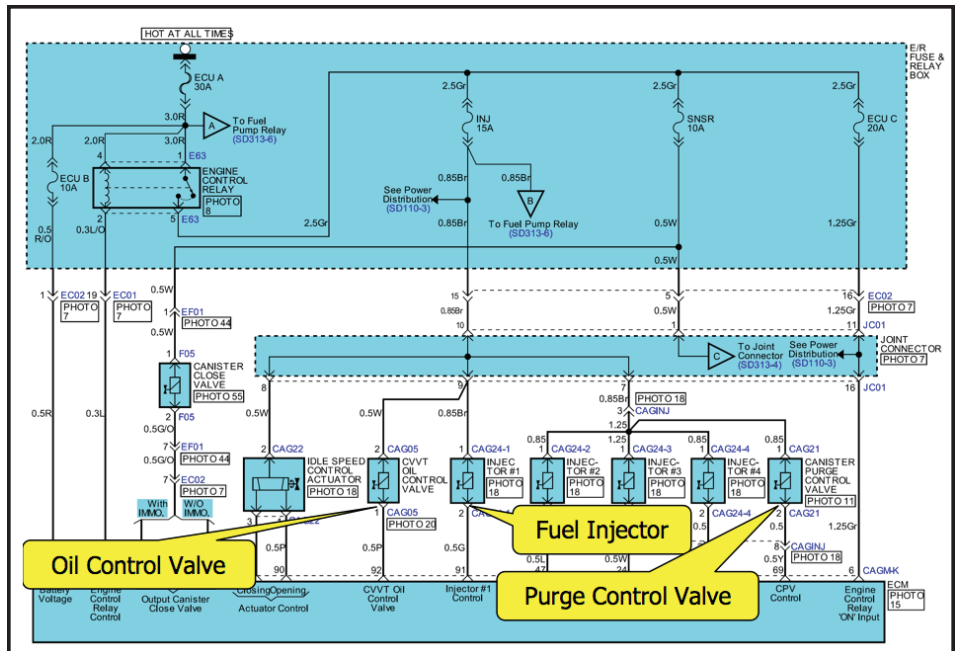
The following are examples of various measurements made with a single trace scope using Channel "A"

- Connect the ground lead to the battery negative terminal
- Signal lead to the terminal of the component you are testing



- Vertical scale represents the voltage level
- Horizontal scale represents time (shows the voltage changes over time)

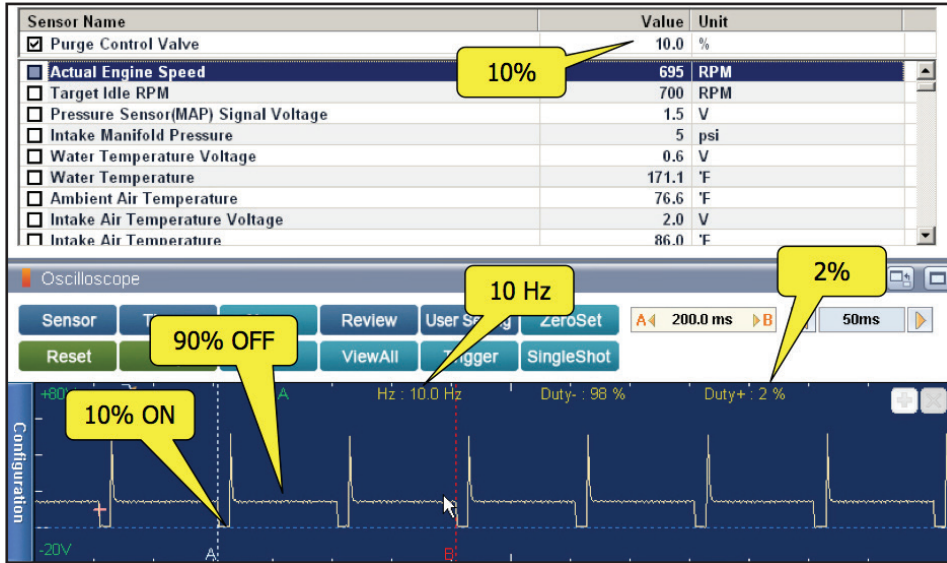
The schematic on the right shows the terminals where the scope was connected.



Continued next page.



## Output Control Circuit Testing Part 2 (Continued)



Purge Control Valve Current Data and scope pattern:

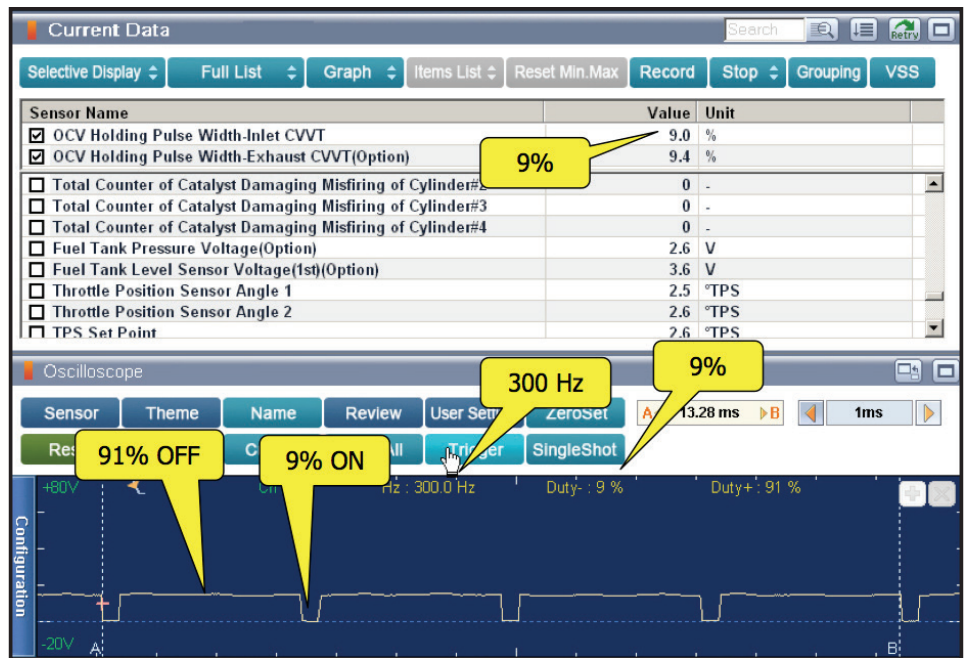
- Slow ON/OFF time, only 10 Hz.
- Current Data indicates 10%, scope indicates 2% (Transient Voltage) duty cycle.
- Scope is comparing the amount of time that the voltage is ON vs the time it is OFF
- The actual time
  - ON time (10%) when the voltage is zero volts
  - OFF time (90%) when the voltage is above zero volts

Oil Control Valve Current Data and scope pattern

- Fast ON/OFF time, 300 Hz
- Current Data and scope indicate 9% duty cycle
- ON time (9%) when the voltage is zero volts
- OFF time (91%) when the voltage is above zero volts

Stay tuned, next year we will continue Output testing on fuel injectors using the VMI.

Happy Holidays!!



## How to Operate 2nd Row Executive Lounge Seats

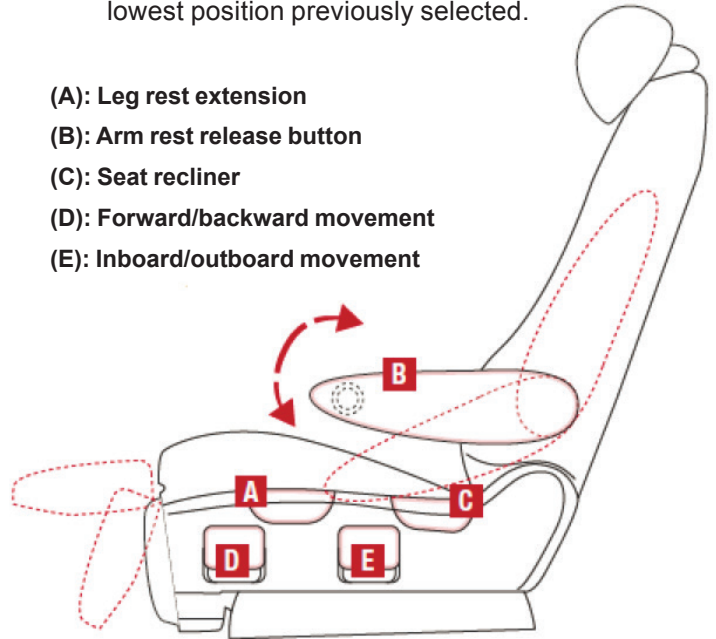
These executive lounge seats in 2nd row are only available in SXL trim level and are offered on both sides, driver's and passenger's. 5 control knobs on an executive lounge seat allow a range of adjustments. In addition to forward/backward, recline and arm rest adjustment, 2 new features are available. The two newly added features are leg rest extension support and inboard/outboard movement to allow maneuvering the seats side to side. Follow the instruction below to operate these features properly.

### Leg Rest Extension:

- Pull control knob(A) to raise the leg rest extension
- Press the same control knob (A) to lower the leg rest, followed by manually pressing the leg rest extension to fully lock into place.
  - Always return leg rest extension to its original position before adjusting seats.

### Arm Rest Adjustment:

- Press the arm rest release button(B) located inside of arm rest and lift up to the desired position
- Press the same button (B) to lower the arm rest to its original position.
  - If arm rest is lifted to the top without depressing the release button (B), then it will return back to the lowest position previously selected.



### Sedona Second and Third Row Seats

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



## Smart Liftgate Operation

The all-new 2015MY Sedona comes equipped with optional Smart Power Liftgate. When the Smart Key fob is in your pocket or purse and you are near the back of the vehicle and, within close proximity for about 3 seconds, the hazard lights will blink and a chime will sound for about 3 seconds as an alert that the Power Liftgate is about to open. Then the alert system will blink and chime two additional times before opening the Power Liftgate. The Smart Liftgate feature is off by default. To enable the Smart Liftgate, go to User Settings in the LCD Instrument Cluster modes.

### Enable Conditions:

- All doors are closed and locked after about 15 seconds
- If the POWER DOOR OFF button is depressed, the Smart Liftgate will not operate.
- The Smart Liftgate feature will not operate when:
  - The doors are recently closed and locked, and the Smart Key is still detected after 15 seconds near the vehicle or within 60 inches of the door handles
  - A door is not locked or closed
  - The Smart Key is in the vehicle



### Smart Power Liftgate Video

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



Please refer to Pit Stop PS 359



## Media Button Inoperative On Head Unit

This article provides diagnostic information in regards to the following customer complaints on 2014 MY vehicles with UVO eServices (non-Navigation) head units:

- Media Button is inoperative
- None of the Media (iPod, Jukebox, CD, BT Streaming, USB) modes are operational
- Media locks up when playing iPod, Jukebox, CD, BT streaming, USB, podcasts, Pandora
- When the reset button is pressed the media is operational, however, the media button still locks up intermittently.

Diagnostic Procedure:

- Confirm the customer's issue. When the media button is pressed, the head unit shows media, however, the mode cannot be changed to another media mode and none of media modes will play.
- Check the software level on the head unit. A countermeasure for this issue was applied to production vehicles in May of 2014 and has been applied to remanufactured units at the PDCs as of July 11, 2014. **NOTE: Any head units with software levels of 1.MP.1.009 or higher contain improved software to address this issue.**

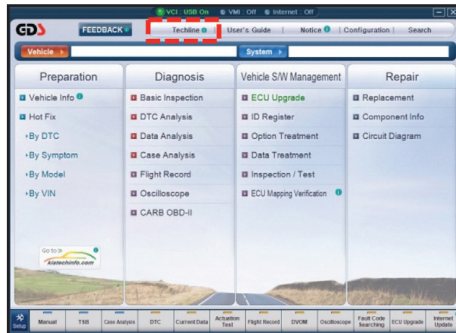
Please refer to Pit Stop PS 355



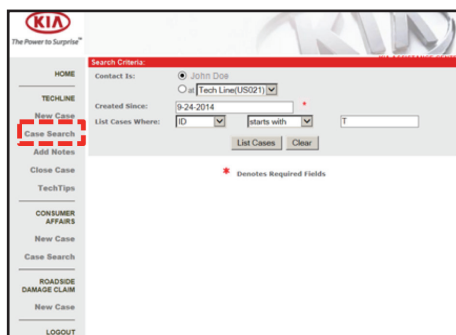
## Creating "Service Alerts" Using GDS

Techline receives many calls from Technicians and Service Managers who request the status of a case be changed from regular Techline case to Service Alert. Follow the steps outlined below to escalate the case status using GDS. **Note: The GDS must be connected to the internet.**

1. Click on the Techline tab on the main GDS screen.



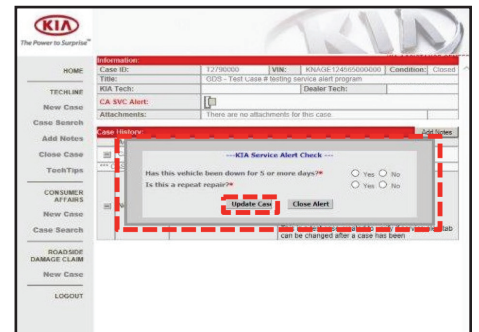
2. Click on **Case Search** (This step has to be performed by the Technician who created the Techline case).



3. Enter the information required to find the case number. Make sure to enter a "T" (for Techline) in the box. Then, click on the case to open it.



4. A pop up window will appear on the screen. Carefully check the appropriate boxes and select **Update Case**.



5. Once **Case Update** has been selected, the Service Alert case is attached to the Techline Case. Service Alert cases are used to notify the Consumer Affairs Department, and District Service/Part Managers, that a vehicle may have specific repair concerns. **Do NOT contact Techline to escalate cases to Service Alert status.**

Please Refer to Pit Stop PS 351

## Crossword Puzzle Solution

We hope you gave this issue's crossword puzzle on page 10 a try. In case you need a little help, here are the answers to the puzzle clues.

