



# TECH TIMES

*Celebrating 20 Years*

## INSIDE THIS ISSUE:

- 1 KGIS and KDS Feedback
- 2 Techline FAQs
- 2 Latest Technical Service Bulletins, Service Actions and Campaigns
- 3 Technician Toolbox
- 3 Quarterly Dealer Equipment Promotions
- 4 Kia University Introduces Electronic Course Evaluations
- 4 Technician Satisfaction Survey Raffle 2nd Qtr 2017 Winners
- 5 Joe's Corner: Not All Leaks Are Created Equal
- 6 New KVID App Course & Test
- 6 Attaching Files to Techline and Feedback Cases
- 7 Word Scramble Puzzle
- 8 Variant Coding Kia Vehicles
- 8 TPMS Sensor Position
- 9 Bluetooth® Information and Troubleshooting
- 11 ACX1299 Internal Bottle Calibration Check
- 12 Kia EV-HEV-PHEV Models
- 13 Kia Manual Air Conditioning System Diagnosis
- 14 Parking Brake Shoe Adjustment After EPB Module Replacement
- 14 Word Scramble Puzzle Solution

## KGIS AND KDS FEEDBACK

When submitting Feedback either through KGIS or KDS, it is very important that all the fields are properly filled out. The Feedback submission form does not auto correct misspelled words or verify the submitted information; this can result in technicians not receiving e-mail replies for follow up.

Under Requester Information section, properly fill Name, Dealer Code, Telephone No. (direct line or cellphone), E-Mail and Dealer Name boxes. This will allow multiple ways of getting in contact if any additional information is needed and/or to confirm that the feedback has been reviewed and corrections will be made.

Under Service Information section, on the (Refer to TOC) text box, input the page number if applicable (ETM) or any additional information that will assist to find a specific location (ex. Step 15 of Repair Procedure) in the Shop Manual. Under the Description text box, fill out your concern and findings in detail.

We strongly encourage the use of Captured Image; this is the most important section that helps expedite the review process. When submitting feedback it is best to attach screenshots and/or pictures of concern, along with a picture of the VIN. It helps in the event that the particular vehicle is not available for inspection; this additional information reduces the amount of time it takes to have the concern corrected in KGIS.

Some corrections take longer than others based on their complexity or availability of vehicles to verify the concern on.

**Feedback**

All information is based on the latest production at the time the service contents were developed. These specifications and service procedures are subject to change without notice. However, if you find an error or if you have any suggestions to improve the contents of the service information manuals, please complete the form below. For technical inquiries refer to the Kia Technical Assistance Line.

A Screen Capture / Image editing program is available to enhance your feedback. [Click Here](#) to download and install - "KGIS\_knowledge\_Feedback.exe". **HINT: Save the Screen Capture / Image editing program to your desktop and run.**

User Guide for the Screen Capture / Image Editing Tool is available. [Click Here](#) to view.

| Service Information                 |  |
|-------------------------------------|--|
| Vehicle                             | RIQ(SC)  |
| Model Year                          | 2018   |
| Engine                              | G 1.6 GDI GAMMA  |
| System                              | Schematic Diagrams   |
| Service Info (SI)                   | ETM  |
| Service Info Section (Refer to TOC) | SD952-3  |
| Captured Image                      | If you used the Screen Capture / Image Editing Tool, your captured screen file can be found in the following location "C:\KiaCapture\Capture.jpg".<br><input style="width: 100%;" type="text"/> <input type="button" value="Browse..."/> |
| Description *                       | The Link to BCM connector M02-B is not working, I get "404 Error" message.   |

| Requester Information |               |             |                  |
|-----------------------|---------------|-------------|------------------|
| Name *                | Technician A  | E-Mail *    | techa@kiausa.com |
| Dealer Code *         | US001         | Dealer Name | Anytown Kia      |
| Telephone No *        | (999)123-4567 |             |                  |

Rest assured that your concerns are in the review process.

Kia would like to thank all technicians that submit feedback and for helping to improve the Service Information in KGIS and KDS.

## TECHLINE FAQs

|   |  |
|---|--|
| <b>Q</b> Do I need to open a TL assistance case for SC1477?                           | <b>A</b> No; a PWA case will need to be opened if the vehicle passes test using KDS, but engine noise is present or if the engine is seized.   |
| <b>Q</b> How do I attach a video of a seized engine to a TL case?                     | <b>A</b> Under the Quick Links section on the KGIS home page; select KDS & GDS Information, then select "KDS - Using KDS to Capture Video and Attach to Techline Cases" and follow the procedure.  |
| <b>Q</b> I have an engine that is seized; how do I bleed the high pressure fuel pump? | <b>A</b> The only way to relieve fuel pressure when the engine is seized is to turn the ignition off, disconnect the battery negative cable and remove the fuel pump relay. Disconnect the electrical connector from the high pressure pump and reconnect the battery negative cable and cycle the ignition on and off multiple times to relieve the pressure. |
| <b>Q</b> How do you set a TPMS sensor from High to Low line?                          | <b>A</b> New TRW sensors come in High State. The TPMS module will automatically switch these sensors to the proper state for the vehicle. When the vehicle is entered using the TPMS tool, the system knows if the sensors should be High or Low.  |

## LATEST TECHNICAL SERVICE BULLETINS, SERVICE ACTIONS AND CAMPAIGNS

|                |   |
|----------------|---|
| <b>ENG 173</b> | 2.4L Driving Performance Logic Improvement (17MY UMa)                                   |
| <b>TRA 070</b> | 2.0T/3.3L Driving Performance Logic Improvement (17MY UMa)                              |
| <b>ENG 171</b> | Service Action: Electric Thermostat Assembly Replacement (SA299) (17MY YG)              |
| <b>SST 054</b> | Servicing AC System Using the Mahle ACX1299 (Multiple Models)                           |
| <b>ELE 140</b> | Service Action: Vehicle Motor Control Unit (VMCU) Logic Improvement (SA301) (17MY PSEV) |
| <b>ELE 139</b> | Service Action: Battery Management System (BMS) Logic Improvement (SA302) (17MY PSEV)   |
| <b>CLI 039</b> | A/C Intake Actuator Replacement (16MY SL)   |
| <b>ELE 133</b> | 2016MY Sorento (UMa) - Central Gateway Overview (16MY UMa)                              |

**CAUTION**

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

**WARNING**

- Vehicle servicing performed by untrained persons could result in serious injury or death 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 and trained Kia automotive technicians only. It is written to provide a general overview 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.

Copyright © 2017 Kia Motors America, Inc. All rights reserved. No part of this publication may be reproduced, stored electronically, or transmitted in any form or by any means without prior written approval from Kia Motors America, Inc. ("KMA"). KMA reserves the right to make any changes in the descriptions, specifications, or procedures at any time.



Published by Kia Motors America, Inc. and produced by Kia University. All rights reserved.

Director, Kia University  
**David Wobst**

Tech Times Editor  
**Lewis Thompson**

Production Coordinator  
**Carlos Sicairos**

Tech Times Contributors

**Dan Algarin**

**Joe Alt**

**Brian Betz**

**Shari Brady**

**Alan Dinh**

**Benny Ishii**

**Barry Nelson**

**Robert Nguyen**

**Neal Moen**

**Chris Risdon**

**Robert Scholer**

**Carlos Sicairos**



Technical Editors

**Lewis Thompson**

**Neem Van der Reest**

Engineering Support &

Technical Writer

**Neem Van der Reest**

Technical Writers

**Scott Irwin**

**Henry Nguyen**

## TECHNICIAN TOOLBOX

Have you been to Kia University lately? There is a new feature in the online new model technology course called "Technician Toolbox." The Technician Toolbox was created specifically with the technician in mind to provide short visual demonstrations of service procedures that can be applied immediately to vehicles in for service and repair.

Take a look at the 2018 Kia Rio Technical Highlights online course (TEC-01-062-1) to learn about the new Rio. While in the Rio module, click on the Technician Toolbox items to find out how to:

- Use KDS "Group" function
- Use KDS to perform Variant Coding
- Use KDS to read and enter transmission data off the QR Code
- Use the Multimedia Information Tester during PDI and audio inspection
- Evacuate R1234yf efficiently from an AC system
- Use KDS to check AC compressor clutch operation
- Use the KDS VMI and oscilloscope function to test wheel speed sensors

There are many more but you'll



## Technician Toolbox

have to check them out for yourself.

Check back into Kia University and look at the 2018 Niro PHEV Technical Highlights online course. You learn the similarities and differences of the newest Niro addition with Plug-in Hybrid Electric Vehicle (PHEV) technology. It, too, includes Technician Toolbox subjects:

- Using the Advanced ASSB Level 1 charger
- Purging r1234yf refrigerant recovery machine hoses to prevent contamination to high voltage hybrid AC compressor
- Using KDS to monitor main and sub battery data
- 6-speed Dual Clutch Transaxle Special Service Tools usage

Check out the module for more Technician Toolbox items.

This technician-focused training approach can also be reviewed anytime as reference. The Technician Toolbox subjects are also a great refresher when a related vehicle repair is required.

## QUARTERLY DEALER EQUIPMENT PROMOTIONS

Are you ever in need of new shop equipment and want to get a great deal? At Kia, we are always working to include newly approved dealer equipment announcements and special discounts in our quarterly promotional flyer. Take advantage of these great deals and stay on top of what's new to help your dealership increase productivity and profits! Also, keep in mind you can have multiple payment options, like paying through Kia parts billing, direct billing to Snap-on Business Solutions, or you can even choose a leasing option that fits your budget.

Our physical flyers are mailed to your service and parts managers quarterly, and pdf versions are always available at [KiaSpecialTools.com](http://KiaSpecialTools.com). We highly suggest to sign up for update notifications so you are constantly up to speed with the latest equipment information and news. Visit [KiaSpecialTools.com](http://KiaSpecialTools.com) today for details on how to be included in our subscriber list!

Approved Dealer Tool and Equipment Program

**3RD QUARTER**  
**JULY - SEPTEMBER**  
**2017**

[KiaSpecialTools.com](http://KiaSpecialTools.com)

888-542-1011

Dealer Promotion

APPROVED EQUIPMENT, TOOLS & SERVICES

NEW!

FisherPRO Electronic Key Cutting Machine  
PAGE 2

NEW!

Borroughs Heavy-Duty Storage Cabinet  
PAGE 2

NEW!

HUNTER AutoComp Elite™ Brake Lathe  
PAGE 7

NEW OR CODE FROM THIS FEATURED SUPPLIER CAN BE FOUND INSIDE:

|                                    |         |                                     |            |                             |            |
|------------------------------------|---------|-------------------------------------|------------|-----------------------------|------------|
| Borroughs Corporation              | Page 2  | CJ Header Engineering Co.           | Page 7-8   | PCD Manufacturing           | Page 5     |
| Bechtel Services Service Solutions | Page 2  | John Day Industries                 | Page 10-13 | Pro Cat International       | Page 13-14 |
| BrakeWay Equipment Co.             | Page 4  | John Day Industries                 | Page 4     | Henry J. Lee                | Page 6     |
| Challenge City Inc.                | Page 13 | Kyle Day                            | Page 2     | Genco Machine Equipment     | Page 6     |
| Chief Automotive Technologies      | Page 15 | KapRage Systems (Source Industries) | Page 10    | Snap-on Tool Shop Solutions | Page 15    |
| Class 2 Station Group              | Page 16 | Reference                           | Page 16    | Optima Corporation          | Page 16    |
| Conquest (John Day Industries)     | Page 4  | OTC                                 | Page 9     | NEW TOOLS & EQUIPMENT       | Page 16    |

To Place Your Order, Call: 888-542-1011

GE PROMOTION

+ 4...

4 14K Lock & Lighted Scanner Alignment Lift  
MODEL NO. EELR592A  
Reg. Dealer Price: \$29,499

TOTAL PACKAGE PROMO PRICE:

\$90,484\*

Reg. Package Price: \$112,040

\*OF EEW5430X, EEW5428JBC, NICE™ \$21,556 VALUE

Speak with your Key Advantage of

This Special Offer:

Offer Valid Through September 30th, 2017.  
Visit [KiaSpecialTools.com](http://KiaSpecialTools.com) for equipment details.

Call 888-542-1011. Visit [KiaSpecialTools.com](http://KiaSpecialTools.com)

All products sold (U.S. shipping point). All applicable taxes, conditions, and fees are additional and will be added to these amounts.  
Prices are based on U.S. Dealer list price and valid through September 30, 2017. Prices and product selections are subject to change without notice.

## KIA UNIVERSITY INTRODUCES ELECTRONIC COURSE EVALUATIONS

Starting August 15, you will no longer complete paper course evaluations at the end of each technical training course. Instead, you will receive an e-mail message from Kia University with a link to a quick 7-question survey (you can also access the survey by selecting the Survey link on the Kia University Transcript page). If you do not complete the survey after 3 days, we'll send you a reminder e-mail.

Your voice matters! Please let us know what you think about our courses by completing the survey. It only takes a couple of minutes, and we use your feedback to improve training delivery and future course development.

**Top right:** A sample transcript page with a link to the course survey highlighted.

**Bottom right:** The survey screen. Answers can be provided from drop-down menus on the right. Suggestions can be offered in the text field provided. Once the survey is complete, click "Submit Survey" (highlighted) to send.

| Transcript        |   |              |         |       |       |                           |
|-------------------|---|--------------|---------|-------|-------|---------------------------|
| Code              | Title   | Completed    | Expires | Score | Grade | Action                    |
| TEC-01-062-1      | Web: 2018 Rio Technical Highlights Course & Test - NEW! | Jul 19, 2017 | N/A     | 50%   | Fail  | Comments                  |
| TEC-04-061-1      | Web: Spring 2017 Technical Update Test - NEW!           | Apr 17, 2017 | N/A     | 85%   | Pass  | Comments                  |
| TEC-01-060-1      | Web: 2017 Cadenza Technical Highlights Course & Test    | Mar 18, 2017 | N/A     | 80%   | Pass  | Comments                  |
| TEC-01-058-1      | Web: 2017 Optima PHEV Course & Test                     | Feb 22, 2017 | N/A     | 80%   | Pass  | Comments                  |
| TEC-01-051-1      | Web: Intro To KDS Course & Test                         | Feb 21, 2017 | N/A     | 80%   | Pass  | Comments                  |
| TEC-03-054-1-0133 | ILC: 2017 Niro Technology Course                        | Feb 17, 2017 | N/A     | 100%  | Pass  | Comments<br><b>Survey</b> |
| TEC-01-057-1      | Web: 2017 Optima HEV Technical Highlights Course & Test | Jan 29, 2017 | N/A     | 80%   | Pass  | Comments                  |

### Kia University ILC: 2017 Niro Technology Course Level One Survey

Your participation in this survey is voluntary. You may choose to take part in the survey or exit at any time. Additionally, you may decline to answer any questions you do not wish to answer. By participating in this survey, you consent that your responses may be used by KIA for analytical purposes and to assist KIA in improving its processes. Please refer to the Privacy Policy for more details.

Please give overall impression for the following

1. Attending this course improved my performance and ability to satisfy customers back on the job. **Strongly Agree**
2. This course was delivered with the right balance of instruction and practice to meet my needs. **Strongly Agree**
3. The facilitator was well-prepared, knowledgeable, and effectively explained the material. **Strongly Agree**
4. The instructor provided meaningful feedback and guidance regarding my progress and answered all my questions. **Strongly Agree**
5. I found this course appropriate to my professional development and would recommend it to others. **Very Likely**
6. Please provide any suggestions to help us improve future Kia University courses and workshops.

Would you like to discuss your experience in this course with a Kia University manager?  Yes  No

**Submit Survey**

## TECHNICIAN SATISFACTION SURVEY RAFFLE 2TH QTR 2017 WINNERS

### Greetings Kia Technicians!

The results of the Q2 -2017 Technician Satisfaction Survey Raffle were once again very positive. Kia Techline continues to perform very well in Q2! We received **5308** survey responses for Q2 2017 and the overall results for Techline were very positive with the overall satisfaction rating for Techline at **92.6%** using a 1 to 5 point scoring system where only a score of 5 counts. As you know, anything less than 5 will be considered a failure. We reviewed all of your responses and gained valuable feedback on your Techline experiences. We will continue to use your feedback to see how we were doing and how we can correct any issues that may be occurring in our ongoing efforts to improve the level of service we provide to all our dealers. Thank you to all who participated in the survey. We greatly appreciate all of your valuable feedback!

### The 3 winners of the Q2-2017 raffle were...

1. Mark Yerkes - Rosen Kia, WI032
2. Paul Early - Lee Johnson Kia, WA029
3. Fernando Casal - Doug Smith Kia, UT013

**Congratulations to all the winners!**

The Techline Technician Satisfaction Survey will continue every quarter throughout 2017 so please continue to submit your feedback by completing the survey when you close your cases and get a chance at winning 1 of 3 \$500 MasterCard gift cards!

In closing, Techline continuously works hard to provide industry leading technical support to all Kia dealers in an efficient manner. Here are the latest performance metrics for Kia Techline:

**Web case response time avg:** 14 minutes

**Phone response time avg:** 13 seconds

**Comeback Ratio:** 0.4%

**New Case Count (incl. PWA cases):** 85,482 YTD

**Overall Satisfaction Survey Score** (Only a score of 5 counts): 92.6%

Thank you all for your continued support! **Go Kia!**

Regards,

David Brisky,  
Techline Communications Manager  
Kia Motors America

## JOE'S CORNER NOT ALL LEAKS ARE CREATED EQUAL

### All leaks are not created equal!

Let me name a few:

- LARGE LEAK
- SMALL LEAK
- VERY SMALL LEAK

Leak checking an EVAP system:

- Can be breeze (large leak)
- Very painful (very small leak)

For all types of EVAP systems you need to develop a:

- Strategy
- Repeatable Process

### Put a plan into action!

- Do Not tighten the Gas Cap!!!!
- Do Not clear any DTC's No matter what the Good Book says!!
- Is the MIL ON or OFF?
- Did I say Do Not clear any DTC's? YES, YES, YES!
- Perform a fault code searching of ALL the modules and save it!
- Get the Freeze Frame Data and save it!
- How much fuel is in the tank? What does the Gas Gauge tell you?

Now that you have that information, a straight forward process works the best.

Remember to keep it simple.

- Use GDS/KDS to perform EVAP tests located in S/W Management
- The enable conditions tell you the vehicle requirements
- Be sure to follow them exactly, or you may get incorrect test results
- Also, look at Engine Actuation Tests, for component testing
- If you have an EVAP tester follow the instructions that come with the unit

When you have confirmed a leak and do not have an EVAP tester.

### Now comes the hard part:

- Fuel tank level between 1/2 to 3/4 (easier to pull a vacuum)
- Plug the hose at the CCV
- Connect a hand vacuum pump to the hose from the PCSV to the canister
- Key ON Engine OFF (KOEO)
- Connect KDS monitor Engine Data Analysis
  - Fuel Tank Pressure Sensor
- Record the value: FTPS: \_\_\_\_\_
- Use the hand vacuum pump to pull a slight vacuum 1 - 5 inHg.
- Record the values: FTPS: \_\_\_\_\_

inHg. \_\_\_\_\_

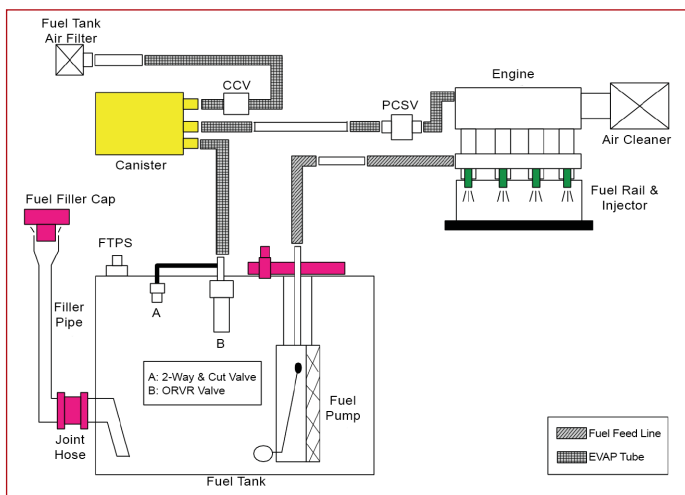


Fig. 1. Standard KIA EVAP System

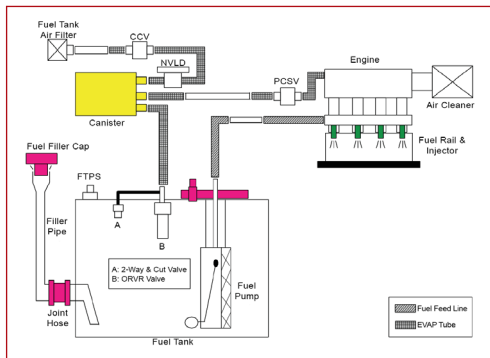


Fig. 2. KIA Hybrid vehicles. (DE, TF, JF)

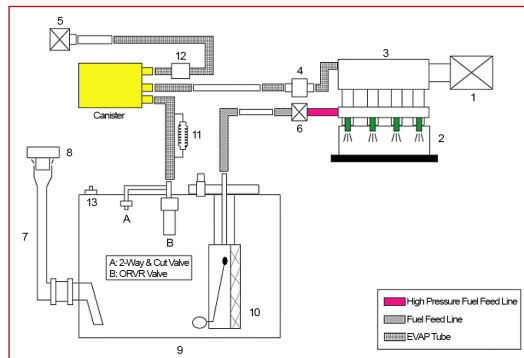


Fig. 3. Plugin Hybrid KIA (JF PHEV)

- The vacuum should hold for 30 - 60 seconds
- If it does not hold, move the hand vacuum pump to another part of the system
- Be sure to keep the plug in the hose at the CCV
- Sooner or later you can isolate the leak

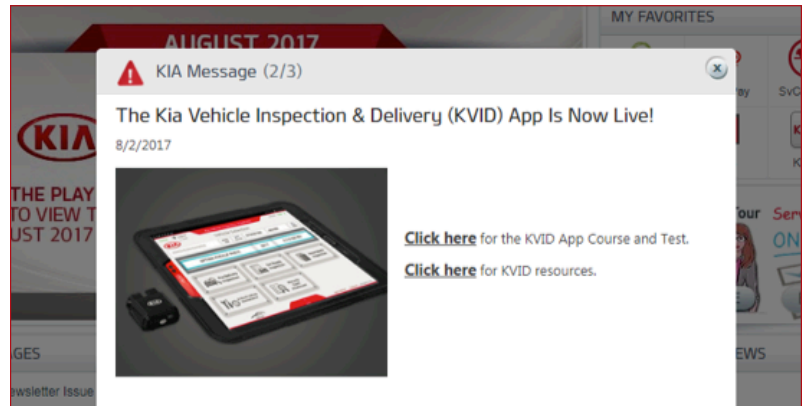
Stay Tuned for my next Edition:  
**Data Analysis. The HIGHS & lows.**

## NEW KVID APP COURSE & TEST

The Kia Vehicle Inspection & Delivery (KVID) App Course and Test (TEC-01-063-1) is available to support the KVID mobile app! This course covers how to connect to a vehicle, inspection sections and checklist items, app navigation and features, and road testing.

After successfully completing this course, Technicians will be able to connect to a vehicle and use the Pre-Delivery Inspection (PDI) function of the KVID app to perform a quality PDI on a Kia vehicle.

This course is required for all Technician levels. Remember to complete this and all your certification requirements before year end!



| ✓ | Name  | Modified             |
|---|---|----------------------|
|   | 2017-10 KVID Application PDI Claim Submission (1)         | Yesterday at 4:36 PM |
|   | TSB SST055 Kia Vehicle Inspection and Delivery Program v2 | August 01            |
|   | KVID User Guide   | July 31              |
|   | KVID Tool Announcement                                    | July 31              |
|   | KVID Dealer Letter 071017                                 | July 11              |
|   | Quick Start Guide 6-28-2017                               | July 10              |
|   | PDI Acknowledgment  | July 10              |

**Web: Kia Vehicle Inspection & Delivery (KVID) App Overview - NEW!**

Title: Web: Kia Vehicle Inspection & Delivery (KVID) App Overview - NEW! Type: AICC/SCORM Web Based Course  
Code: TEC-01-063-1 Price: \$ 0.00  
Units: 0

This 30-minute web-based training (WBT) course is designed to deliver the information Kia Technicians need to use the Pre-Delivery Inspection function of the Kia Vehicle Inspection & Delivery (KVID) mobile app when performing Pre-Delivery Inspections (PDIs) on Kia vehicles.

This course familiarizes Technicians with the Pre-Delivery Inspection function of the KVID app, including operation, connecting to a vehicle, inspection sections and checklist items, app navigation and features, entering required information, and road testing. After completing the course, Technicians will complete a Performance Assessment to demonstrate they are ready to perform perfect PDIs using the Pre-Delivery Inspection function of the KVID app.

**Description:** After successfully completing this course, Technicians will be able to:

- Identify the contents of the Kia Vehicle Inspection and Delivery kit
- Explain the importance of verifying the PDI Interface Module (PIM) ID
- Enter required information, including NG descriptions and photo/video attachments, battery information, and tire pressure
- Connect to a vehicle and use the Pre-Delivery Inspection function of the KVID app to perform a Pre-Delivery Inspections (PDIs) on a Kia vehicle

**Prerequisites:** Web: Pre-Delivery Inspection Technician Course & Test  
**Minimum System Requirements:** Test your system requirements, [click here](#).  
**Equivalent Courses:** None

**ENROLL**

[Add to My Learning Plan](#)

## ATTACHING FILES TO TECHLINE AND FEEDBACK CASES

Need assistance on attaching images or video files to Techline case or for Feedback on information issues? On the left side of the KGIS home page, you will find the Quick Links section to the most used links throughout KGIS. One of those sections is KDS & GDS Information, inside you will find multiple articles on commonly asked questions for both KDS and GDS scan tools. To find out more information on how to attach files for Techline cases or Feedback cases, refer to the articles below:

- KDS - Attaching Files to Techline Cases
- KDS - Attaching Files to Feedback Cases

For these and more articles be sure to check often, as new features are added to KDS, articles on these procedures will be added.

### Quick Links

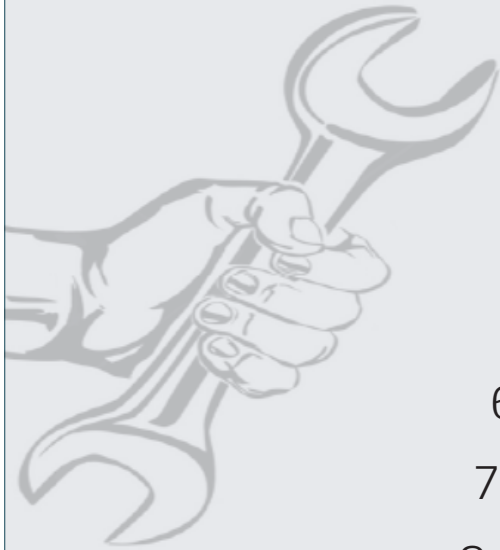
- Vehicle Info
- KDS & GDS Information
- Maintenance Schedule
- Owner's Manuals
- UVO & Bluetooth
- Unit Conversion Tool
- Variant Codes

### Kia Links

- Kia Techline

## WORD SCRAMBLE PUZZLE

Test your search ability on this puzzle: we have taken 19 words from articles in this issue and scrambled them. Unscramble the words to reveal the secret phrase in the box at the bottom of the page. Solution is on page 14.



1. UONIATLEVA \_\_\_\_\_ Page 4

2. ONOMPTSRIO \_\_\_\_\_ Page 3

3. EDEKCBFAF \_\_\_\_\_ Page 1

4. CTIESLHKC \_\_\_\_\_ Page 6

5. NANIEHCITC \_\_\_\_\_ Page 3

6. CITISNAAOFST \_\_\_\_\_ Page 4

7. ETLICHNE \_\_\_\_\_ Page 6

8. HRDBIY \_\_\_\_\_ Page 5

9. VCIRSEE \_\_\_\_\_ Page 1

10. IFEEDCEITLR \_\_\_\_\_ Page 12

11. KELA \_\_\_\_\_ Page 5

12. DSNOIIGAS \_\_\_\_\_ Page 13

13. NARTVAI \_\_\_\_\_ Page 8

14. NNCIOTEISP \_\_\_\_\_ Page 6

15. OTBEUHOSORTL \_\_\_\_\_ Page 10

16. OXOBLTO \_\_\_\_\_ Page 3

17. ETCDRUPA \_\_\_\_\_ Page 1

18. NSGOIIPNOIT \_\_\_\_\_ Page 8

19. AIGME \_\_\_\_\_ Page 1



The 2017 Kia Soul EV  
offers:

" \_\_\_\_\_ "

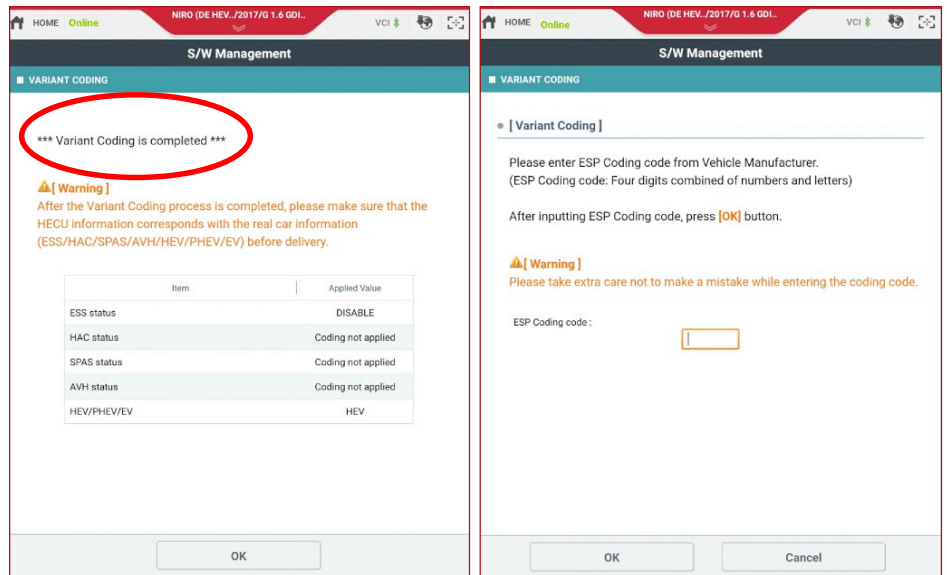
\_\_\_\_\_ "

Solution, page 14

## VARIANT CODING KIA VEHICLES

When replacing a module that requires variant coding, it is important to ensure Wi-Fi (internet) connectivity with the KDS/GDS scan tool. Internet connection allows the KDS/GDS to automatically input the variant code without having to manually input the code. When the code is entered automatically you will not be prompted to do any actions, the KDS/GDS will prompt "Variant Coding is completed" to inform the technician variant code was successfully programmed to the module.

If a technician is prompted for a variant code, ensure that the KDS is connected to the internet. Variant coding should occur automatically. If there are still difficulties with variant coding, ensure that KDS and VCI have not been compromised, and that there are no poor connections related to the system module that would prevent proper communication with the KDS.

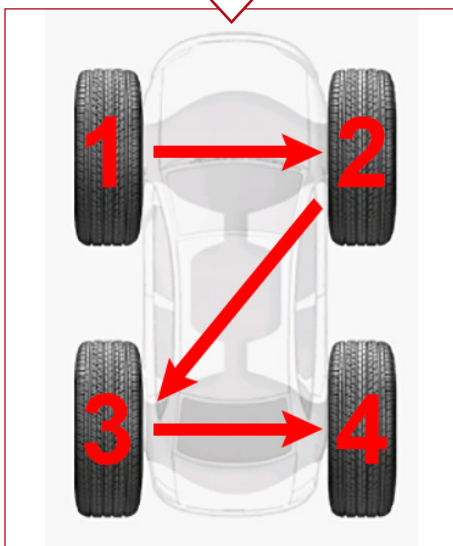


## TPMS SENSOR POSITION

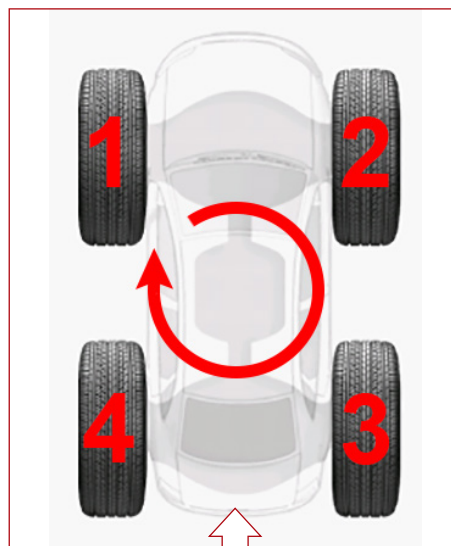
When diagnosing TPMS-related DTCs, make sure you are investigating the correct sensor. The TPMS positioning from the manufacturer may be different from the positioning shown on a KDS. See the diagram below.

### Pattern:

The TPMS sensor manufacturer positions the sensors in a "Z" pattern, as shown below.



The KDS uses a clockwise pattern, as shown above. This helps technicians by requiring them to only walk around the vehicle once when registering the sensors.



### Description:

Some earlier descriptions may show "Sensor 1" through "Sensor 4".

**Note:** C1335 is shown as Sensor 4.

- + C1332 Sensor 1 Fault
- + C1333 Sensor 2 Fault
- + C1334 Sensor 3 Fault
- + C1335 Sensor 4 Fault

- + C1332 Front Left Sensor Fault
- + C1333 Front Right Sensor Fault
- + C1334 Rear Left Sensor Fault
- + C1335 Rear Right Sensor Fault

Newer descriptions will not number the sensors but will describe the location of the sensor.

**Note:** C1335 is shown as Right Rear Sensor

Please refer to PitStop PS474.



## BLUETOOTH INFORMATION AND TROUBLESHOOTING

This article contains the following information regarding **Bluetooth®**:

- Steps to pairing a device (phone) on 2018MY vehicles
- Differences in pairing instructions if it is the first phone paired or a 2nd phone that needs to be paired
- How to diagnose and troubleshoot customer **Bluetooth®** complaints

**Pairing a phone if no phone has previously been paired:**

1. To begin the phone pairing process, press the green "Call" button (Fig. 1) on the steering wheel or the "PHONE" hard key on the head unit (if equipped).



Fig. 1. Call button on left of steering wheel



Fig. 2. On-screen pairing instructions

2. Turn **Bluetooth®** on from the phone then search and select the vehicle name on the phone that matches the name on the head unit screen (Kia Motors) (Fig. 2).
3. Follow the instructions on the phone to confirm the passkey displayed.

4. Select "OK" or "Pair" on the phone to complete the pairing.

**Note:** During the pairing process, ensure all requests for phonebook download and future auto-connection have been accepted on the phone (Android phones and other non-iPhones require this for the contacts to download successfully and for the phone to auto-connect).

**Pairing a phone if a phone has previously been paired and the other phone is not connected:**

Follow step 1 and select "Add New" when the pop-up below (Fig. 3) is displayed, and then proceed with steps 2 through 4.



Fig. 3. Press Add New

**Pairing an additional phone if a phone has previously been paired and the other phone is currently connected in the vehicle:**

Instructions vary by head unit and are dependent on whether it has a touch screen or non-touch screen display. Start by pressing the "SETUP" hard key (Fig. 4, below) and select "Bluetooth" and/or "Bluetooth Connections," and then proceed to the screen which allows the user to select "Add New" (Fig. 5, next page). If necessary, refer to the quick start guides and/or manuals for the specific head unit/platform.

*Continued next page*



Fig. 4. SETUP button on center console

## BLUETOOTH INFORMATION AND TROUBLESHOOTING (continued)

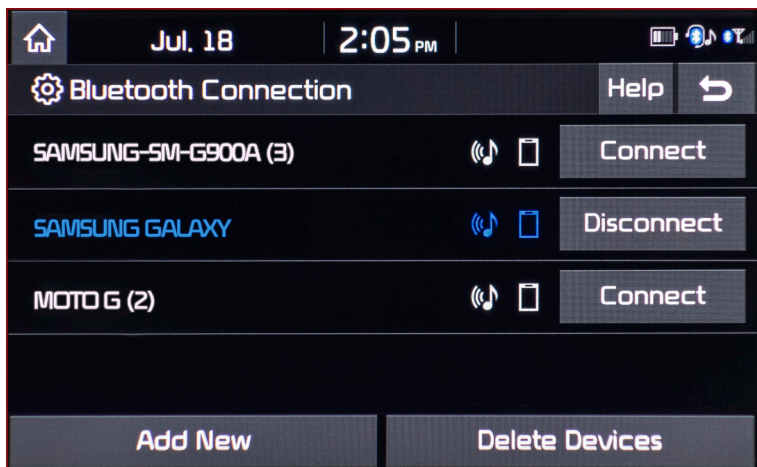


Fig. 5. Add New selection on screen

### Bluetooth® Diagnostics and Troubleshooting

- Have the customer demonstrate the concern, then pair and connect another phone, and confirm the concern is present with the 2nd phone.
- Try to duplicate the concern with other phones if the customer's phone is not available.
- Determine if the concern can be duplicated in a similar vehicle (same model year and head unit as the customer's vehicle).
- In general, if the concern cannot be duplicated with a 2nd phone and only duplicates with the customer's phone, the concern may be related to phone compatibility or the specific operating system or Apps/phone settings on the customer's phone. Advise the customer to confirm if the latest phone operating system software has been installed on their phone.
- If the concern can be duplicated on both the customer's vehicle and a similar vehicle with multiple phones, open a Techline case and provide the specific phone and head unit software information listed in the "Opening a Techline Case" section below.
- If the concern can be duplicated on the customer's vehicle with multiple phones and cannot be duplicated on the 2nd like vehicle, update the head unit software (if a TSB and software is available) or order a replacement head unit (if no TSB/software is available). If Techline assistance is requested, include both the phone information and the head unit software version from both of the vehicles tested.

### Opening a Tech Line Case

The following information is necessary to open a Bluetooth-related Techline case requesting assistance regarding a Bluetooth complaint:

- Customer and dealer test phone information including manufacturer, model, operating system of the phone, carrier.
- Description of the concern (unable to pair, disconnects, Bluetooth sound quality, etc.) and any details (frequency, media mode, while driving, etc.) regarding the conditions in which the concern occurs.

- Head unit type (navigation, base audio, UVO without navigation) and head unit software version (refer to TSB ELE091 to obtain the software version of each head unit and identify the head unit type such as AVN 4.0, UVO 3.0, etc.). It is recommended to add a picture of the head unit software version to the case along with a picture or video of the concern.
- Does the vehicle have any aftermarket electric/electronic items installed and what devices/cables etc. does the customer have plugged into the device ports (12 volt port, USB/charging ports, etc.)?

### Basic Bluetooth® Recommendations

Many Bluetooth® connectivity/auto-connection concerns are resolved by performing the following:

1. Delete the phone from the head unit and the head unit from the phone
2. Turn the phone off and then back on
3. Re-pair the phone to the head unit
4. If steps 1-3 have been performed and concern is still present, reset the head unit using a paperclip or pen if the head unit has a reset button. If no reset button, remove the audio fuse or negative battery cable for five (5) minutes and then reinstall the fuse or reconnect the cable.

### Bluetooth® Sound Quality

- Using the customer's phone, call a landline from the vehicle, such as a Service Advisor or Service Manager at the dealer, and attempt to duplicate any Bluetooth® concerns.
- If the customer complaint is calling from vehicle to vehicle via a Bluetooth® connection to a cell phone, some concerns such as "clipping" (loss of some words) during a conversation can occur, especially if both mobile phones are high definition sound capable (latest iPhones and some Android phones). The phone manufacturers have increased the noise cancellation on the phone side. Each head unit also has noise cancellation; therefore, talking vehicle-to-vehicle using Bluetooth® can result in quadrupled noise cancellation. The extreme circumstance is when the two (2) people are talking simultaneously.

### Android Auto, Apple CarPlay and Bluetooth®

- When connecting to Android Auto the phone will automatically pair to Bluetooth® (if it has not already been paired). Bluetooth® is connected and calls are made utilizing the Bluetooth® while connected via Android Auto.
- When connecting to Apple CarPlay, it is perfectly normal for the customer to see a message that Bluetooth® is disconnecting. Bluetooth® is not connected when Apple CarPlay is connected (phone calls are made through the wired cable connection).

Refer to PitStop PS 511

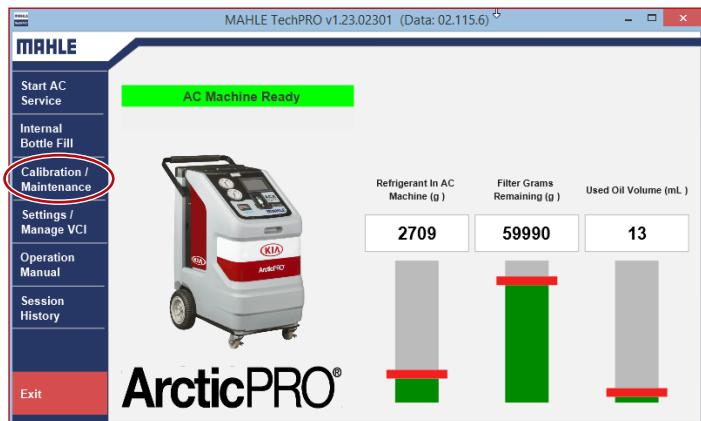
## ACX1299 INTERNAL BOTTLE CALIBRATION CHECK

The calibration of the Internal Bottle scale can be easily checked. A Calibration Check Ball (44.45mm), included in the ACX1299 accessory kit, is used to verify bottle weight accuracy. Perform this simple check every 3 months.

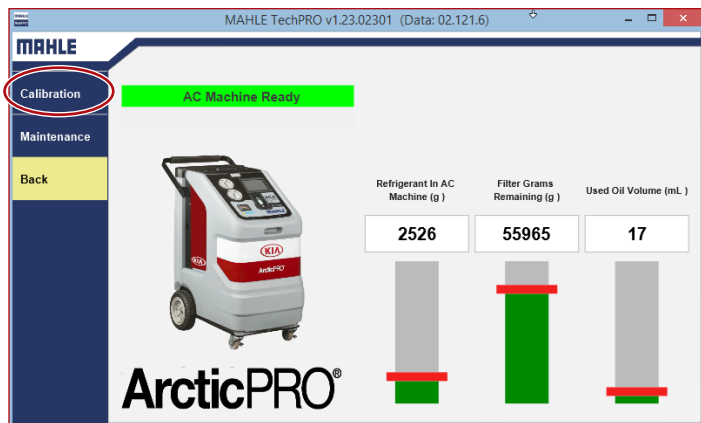
Scheduling a service call to have the all systems in the ACX1299 calibrated once a year is recommended.

### Calibration Check Procedure

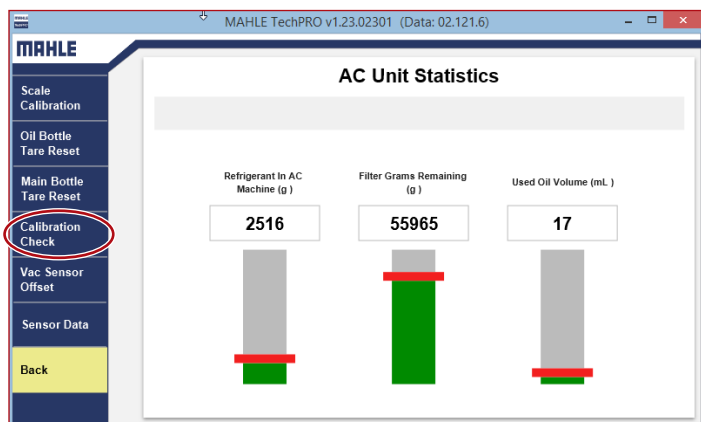
1. Select "Calibration / Maintenance"



2. Select "Calibration"

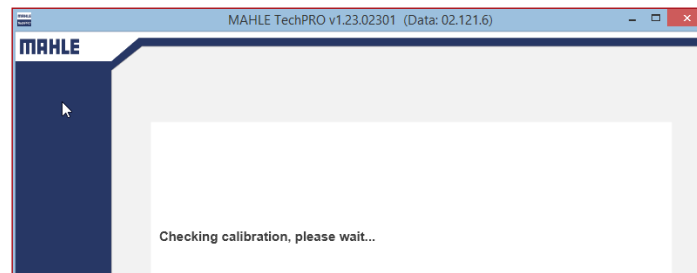
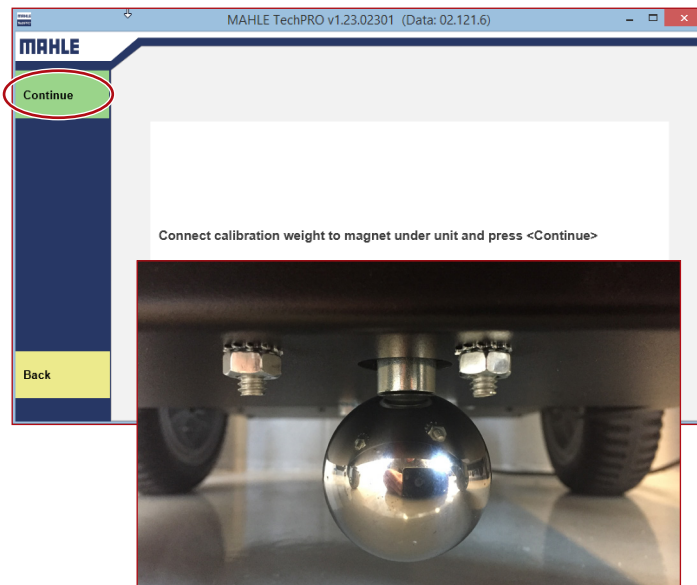


3. Select "Calibration Check"

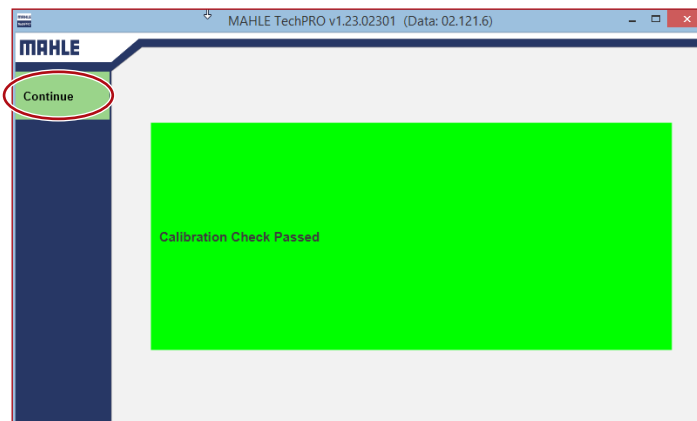


4. Attach the Calibration Ball (PN: 02880 40800) to the magnet on the front/underside of the ACX1299

5. Select "Continue"

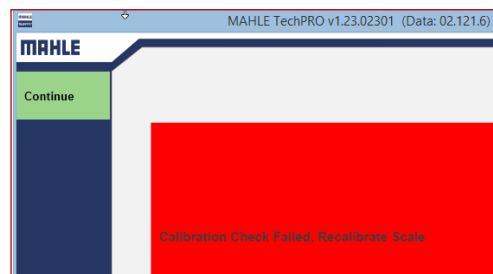


6. When the Calibration Check is complete, Select "Continue"



If the Calibration Check fails, contact Mahle at (800) 468-2321

Refer to  
TSB: SST 054



## KIA EV-HEV-PHEV MODELS

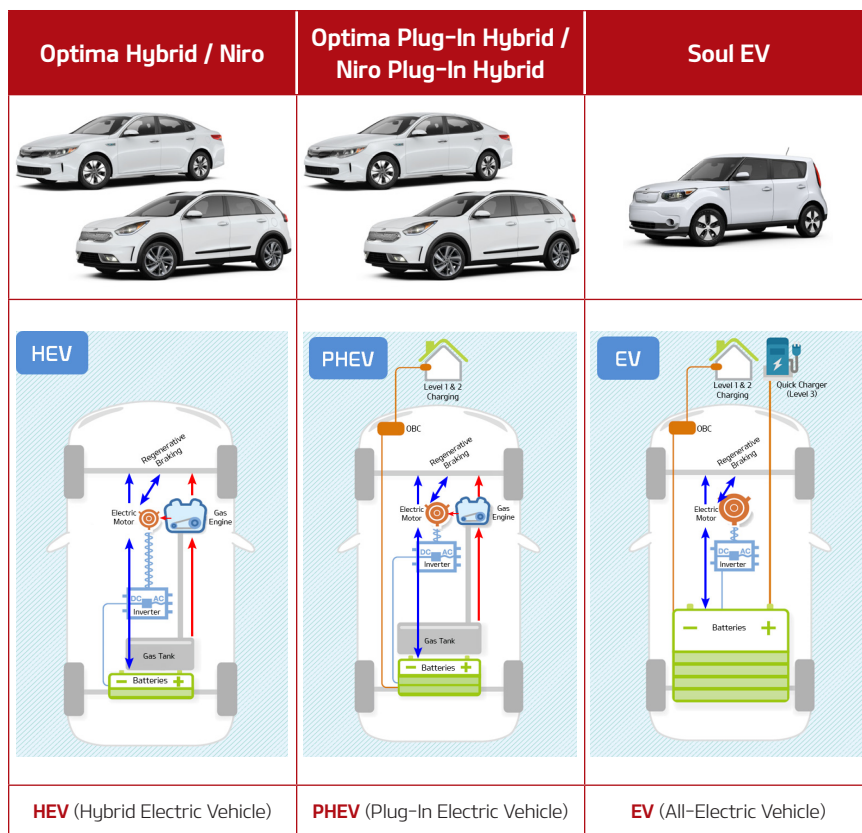
In 2011, Kia introduced its first “electrified” model, the Optima Hybrid. Now, by the end of this year (2017) Kia will have a total of 5: 2 Hybrids (HEV; the Optima Hybrid and Niro), 1 Electric (EV; the Soul EV) and 2 Plug-In Hybrids (PHEV; the Optima Plug-In Hybrid and the new Niro Plug-In Hybrid). In this article, we will discuss the key differences between these 3 powertrain variants and which may be better suited for different customers.

As can be seen in the graphic (right) and chart (below), the **HEV** has the smallest electric motor and battery. This system captures energy whenever the vehicle is decelerating and returns it when accelerating to save fuel. It does not plug in for charging as the small battery does not provide meaningful storage capacity for electric-only driving.

The **PHEV** is the most complicated, as it has all of the components of an internal combustion vehicle, all the EV components and the added complexity of combining the two systems to provide the most efficiency and best possible interaction when driving.

The **EV** is the simplest system without needing any internal combustion components. It has the largest battery and motor which can propel the vehicle in all driving conditions and recapture the most energy during deceleration. It has multiple charging options from plugging into a standard household outlet (110v) which can take more than 24 hours to charge, to direct DC fast charging which can return 80% in less than 30 minutes. It has the best driving experience in terms of immediate power delivery and low NVH. It also has minimal maintenance requirements.

So, based on the Comparison Chart, which powertrain is best suited for different customers and driving patterns? (Actual mileage will vary with options, driving conditions, driving habits and your vehicle’s condition.)



| Comparison Chart                                       | Niro HEV | Optima PHEV | Soul EV       | Notes   |
|--|----------|-------------|---------------|---|
| Battery Capacity (kWh)                                 | 1.56     | 9.8         | 27            | Determines the available electric range and power   |
| All Electric Range “AER” (Miles) (EPA combined rating) | n/a      | 29          | 93            | Based on the battery capacity above   |
| Motor Power (kW)                                       | 32       | 50          | 81            | Provides both the available power and ability to capture energy during regenerative braking |
| L1 (110V) charge time                                  | n/a      | 9 hours     | 24+ hours     | Uses the On Board Charger (OBC) to convert AC to DC to charge the HV battery                |
| L2 (220V) charge time                                  | n/a      | 3 hours     | 5 hours (30A) | Uses the On Board Charger (OBC) to convert AC to DC to charge the HV battery                |
| L3 (50kW DC) charge time                               | n/a      | n/a         | 30 min (83%)  | Uses a direct DC connection to fast-charge the HV battery                                   |

### HEV

- Best for high mileage drivers where fuel savings can have an impact.
- Even better if the driving pattern includes a high percentage of city-cycle (stop-go) miles and/or long idling periods. (Including taxi, “Uber”, etc.)
- The customer will likely not notice any drop in the battery’s State of Health (SOH), unless it impacts MPG.

### PHEV (Sometimes referred to as “EV training wheels”)

- Best for drivers with daily mileage close to the available all-electric range (currently 25–30 miles), but who also need intermittent long range capability. Good for a single car household.
- The customer likely will be aware of any significant drop in the battery’s State of Health (SOH) and overall MPG.

### EV

- Best for owners who have a consistent commute within the EV range.
  - This must include accounting for any use in extreme temperatures and for some HV battery capacity loss throughout the ownership period.
- Good for multiple vehicle households where the EV is used for commuting and the internal combustion vehicle for longer trips.
- Best driving experience and typically lowest cost of ownership.
- The customer will likely be very aware of any significant drop in range due to the battery’s state of health (SOH).

## KIA MANUAL AIR CONDITIONING SYSTEM DIAGNOSIS

In Article 1 (Vol. 20 issue 3), we discussed how Manual Climate Control systems communicate with other modules on the C-CAN network, but do not provide climate control system specific diagnostic data to GDS/KDS.

In this article we will discuss how to verify, diagnose, and repair other components of the manual A/C system such as ambient & evaporator sensors, air flow & distribution doors and actuators/doors.

Depending on the driver's selection, the Manual Climate Control module controls the following (Fig. 1):



Fig. 1. 2017 Forte (YDm) Manual Climate Control Panel and Control Module

- Air temperature
- Volume of air
- Intake air source
- Distribution of air

The following are a few examples of components tests that can be performed to determine if any parts are defective or are operating as normal.

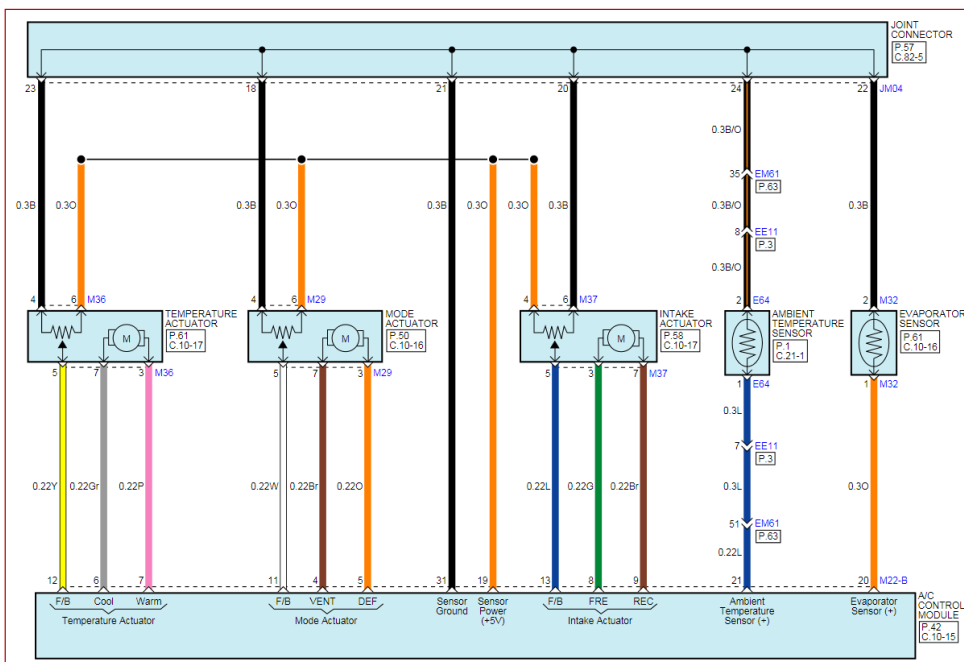
If initial diagnosis of the concern points to an airflow, temperature or air intake concern, begin by checking each of the actuators by first checking the control module feedback (Signal) 5 volts and ground circuits. If these check ok, continue by testing the actuator motor circuits for 12 volts and ground (see Fig. 2).

The following readings are for a 2017 Forte (YDm):

- Mode door position feedback (5V)
  - 0.3 V (Vent)
  - 4.7 V (Defrost)
- Temperature door (mix/blend) position feedback (5V)
  - 0.3 V (Max cooling)
  - 4.7 V (Max heating)
- Intake door (fresh/recirculate) position feedback (5V)
  - 0.3 V (Fresh)
  - 4.7 V (Recirculate)

Testing for both the ambient and evaporator temperature sensors can be easily checked by testing for a good ground and measuring the signal (+) circuits for available voltage and also performing resistance tests with a Volt/Ohm meter.

- Evaporator temperature sensor
  - 14°F (43.35 kΩ or 2.96 Volts)
  - 32°F (27.62 kΩ or 2.40 Volts)
  - 68°F (12.11 kΩ or 1.44 Volts)
- Ambient temperature sensor
  - 68°F (37.32 kΩ)
  - 86°F (24.26 kΩ)
  - 104°F (16.13 kΩ)



All of the above mentioned tests/measurements usually require the need for a Digital Volt Ohm Meter (DVOM) and a set of Kia T-connectors. For more information on T-Connectors, please refer to TSB ELE 064.

Fig. 2. 2017 Forte YDm Manual A/C Mode actuator Model Actuator and Sensors Electrical Diagram

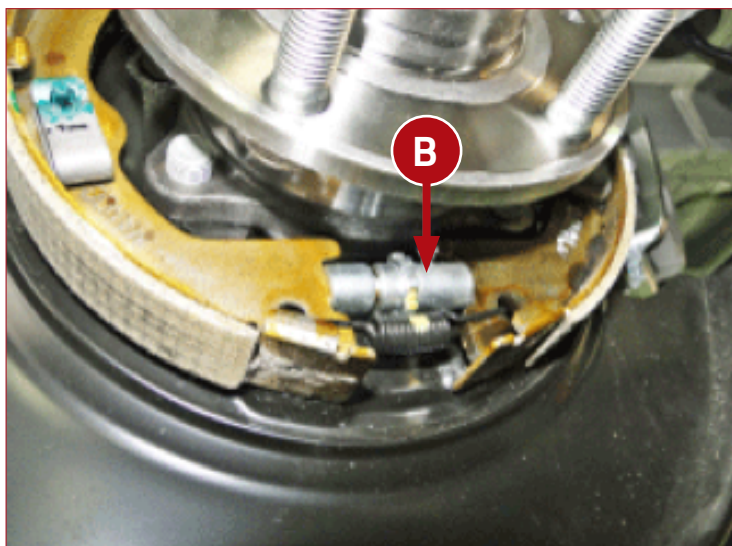
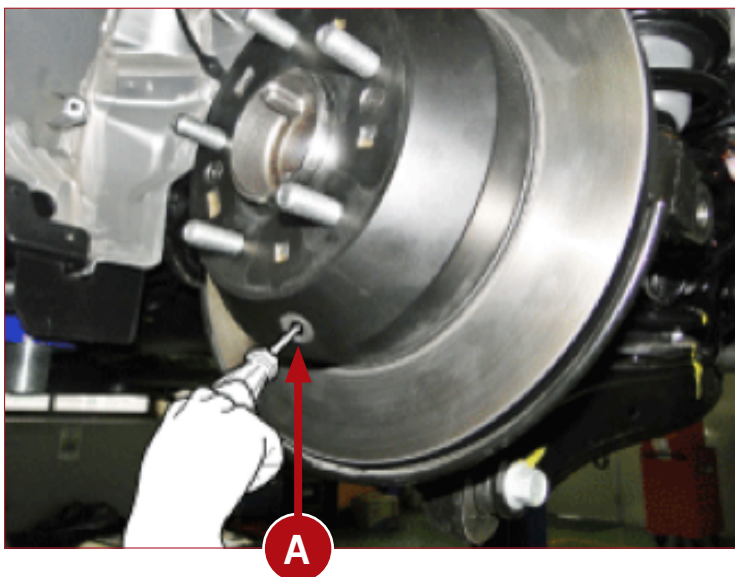
## PARKING BRAKE SHOE ADJUSTMENT AFTER EPB MODULE REPLACEMENT

After the replacement of the Electronic Parking Brake (EPB) module on any 16MY~ Sorento vehicle equipped with EPB, adjustment of the parking brake shoes must be performed as outlined in the procedure below. Prior to adjustment of parking brake shoes, visually the rear parking brake linings and springs to ensure all components are in good condition without excessive wear, damage, heat spots, etc.

**Note: Failure to adjust the parking brake shoes after replacement of the EPB module may result in premature EPB module failure.**

1. Remove the plug (A) from the brake rotor.
2. Rotate the toothed wheel (star adjuster) (B) until the brake rotor is locked and cannot be turned by hand.
3. Rotate the toothed wheel (star adjuster) (B) 5 clicks in the opposite direction.
4. Ensure the brake rotor rotates freely with no drag.
5. Repeat the steps 1-4 for the opposite rotor.
6. Function test the EPB system to confirm proper operation.

Please refer to PitStop PS 519



## WORD SCRAMBLE PUZZLE SOLUTION

Here is the solution to the Word Scramble puzzle on page 7. Each word is unscrambled, revealing the "secret Kia Soul EV message."

The 2017 Kia Soul EV  
offers:  
"LIFE IN THE FASTER  
LANE"

- |              |               |             |              |               |                 |             |           |            |                |          |               |             |                |                  |             |              |                 |           |
|--------------|---------------|-------------|--------------|---------------|-----------------|-------------|-----------|------------|----------------|----------|---------------|-------------|----------------|------------------|-------------|--------------|-----------------|-----------|
| EVALUATION   | PROMOTIONS    | FEEDBACK    | CHECKLIST    | TECHNICIAN    | SATISFACTION    | TECHLINE    | HYBRID    | SERVICE    | ELECTRIFIED    | LEAK     | DIAGNOSIS     | VARIANT     | INSPECTION     | TROUBLESHOOT     | TOOLBOX     | CAPTURED     | POSITIONING     | IMAGE     |
| 1. UNIATLEVA | 2. ONOMPTSRIO | 3. EDEKCBAF | 4. CTIESLHKC | 5. NANIEHCITC | 6. CITISNAAOFST | 7. ETLICHNE | 8. HRDBIY | 9. VCIRSEE | 10. FEEDCEITLR | 11. KELA | 12. DSNIIIGAS | 13. NARTVAI | 14. NNCIOTEISP | 15. OTBEUHOSORTL | 16. OXOBLTO | 17. ETCDRUPA | 18. NSGOIIPNOIT | 19. AIGME |