



Kia University

TECH TIMES

Celebrating 20 Years

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2017 TSI SURVEY WINNERS

Thank you to everyone who participated in the 2017 Technician Satisfaction Index (TSI) survey! These Technicians were chosen at random from 1,617 survey respondents to win \$100 Amazon e-Gift Cards:

Technician	Dealer	Technician	Dealer
Marcus Smith	Cobb County Kia (GA065)	Gerardo Vargas	Casa Kia (TX142)
Mark Yerkes	Rosen Kia (WI032)	Michael Stone	Gary Lang Kia (IL057)
		Juan Preciado	Valley Kia (CA233)

EARLY WARNING REPORTING PERIOD

With the launch of three all-new 2018 models Rio (SC) and soon to follow Niro Plug-In Hybrid (DE PHEV) and Stinger (CK), we are in the **Early Warning Reporting (EWR)** period that will run 150 days from the date of the first warranty claim submission for each model.

In order to get your warranty claims paid prior to the repair, a Techline case will need to be opened on every vehicle regardless of the concern, during this 150 day period. Save any/all parts, take and provide pictures and thorough documentation so we can drive quality improvements, while we strive for a segment award in IQS.

We appreciate all your efforts in helping to drive quality and overall brand recognition.



July 19th - September 8th

2017 Technician Satisfaction Index Survey





✓ Shorter Survey

✓ Your Voice Counts

✓ We Want Your Opinion

Click here to take the Survey and enter a chance to win \$100 Amazon.com Gift Card

TECHLINE FAQs

Q	What do I do if a vehicle returns and there is a closed Techline assistance case for the same concern?	A	Submit a request to reopen; do NOT open a new duplicate case for the same concern. After validating the VIN > locate the previous case from the list below the page > click on the TL case number > click on the Request Reopen box in the upper right corner and enter the reason for the reopen request and click submit.
Q	I am having a hard time finding the compression readings in KGIS for a 2017 QL Sportage 2.0L T-GDI motor, where are they located?	A	In the Enhanced Search section of KGIS home page enter VIN or manually select 2017 Sportage with 2.0 T-GDI and under Search Text, type "compression pressure", under Shop you will have search result linking directly to Compression Pressure Inspection.
Q	Do I have to do the sound test for SC147 even if I think the engine is going to lock or throw out a rod during a test?	A	Yes, it is required to do the sound test if the engine is running and the test is possible. If it is not possible to run the test a video showing the reason why the test cannot be run and the VIN is required. These are the requirements from the warranty department and outlined in the SC147 bulletin and warranty bulletin 2017-09.
Q	I am performing a Niro PDI and it calls for the GR8 Battery test but I cannot do the test because it has the built-in 12 volt Li-ion battery, how do I proceed with inspection?	A	Please see PitStop PS487. In the PDI > PDI06 > 8 Items battery test, if you have the built-in 12 volt Li-ion battery system, enter 12.6 volts and 600 CCA. Take a picture of the engine compartment for battery test data in order to continue.

LATEST TECHNICAL SERVICE BULLETINS, SERVICE ACTIONS AND CAMPAIGNS

SA 316B	Service Action: Shift Quality & Wake-Up Logic Improvement (ENG 177B) (18MY JFa)
SA 316C	Service Action: 2.4L Engine Start Logic Improvement (ENG 177C) (18MY UMa)
SA 316A	Service Action: 2.4L Shift Quality & Wake-Up Logic Improvement (ENG 177A) (18MY JFa)
SA 315Ar1	Service Action: Shift Quality Logic Improvement (TRA 071A) (18MY JFa, UMa)
SC 155	Steering Gear Assembly Pinion Plug Inspection/Repair/Replacement (14-16MY PS, PSEV)
SC 156	Seat Belt Anchor Pretensioner Cover Warning Label Application (15-17MY KH)
SC 125	Steering Gear Assembly Pinion Plug (14-16MY PS, PSEV) (CLOSED)
ELE 091r3	Identifying Head Unit Software Version For Direct Exchange (All Models)



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.

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TECHLINE 2017-2018 HOLIDAY HOURS

Christmas

Saturday, Dec. 23	7 AM - 2 PM PST*
Monday, Dec. 25	Closed
Tuesday, Dec. 26 - Friday Dec. 29	6 AM - 3 PM PST*
Saturday, Dec. 30	7 AM - 2 PM PST*

New Years

Monday, January 1	Closed
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* Techline staff will be limited during holiday hours. Business hours will resume to normal January 2nd, 2018.

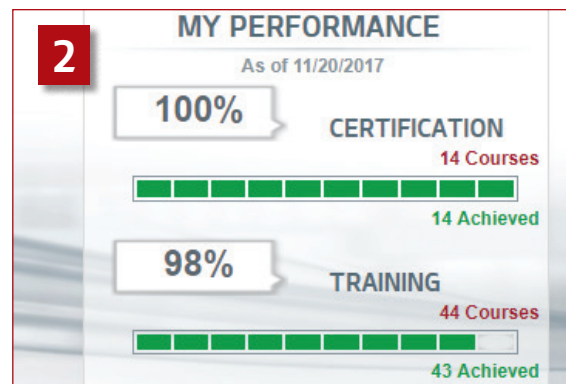
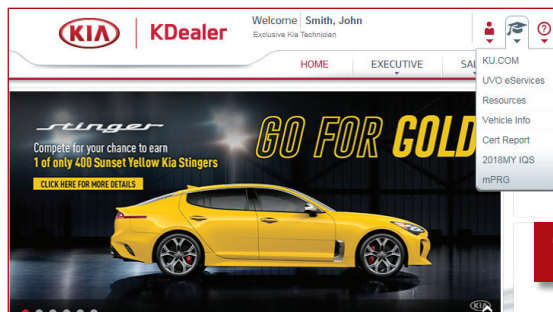
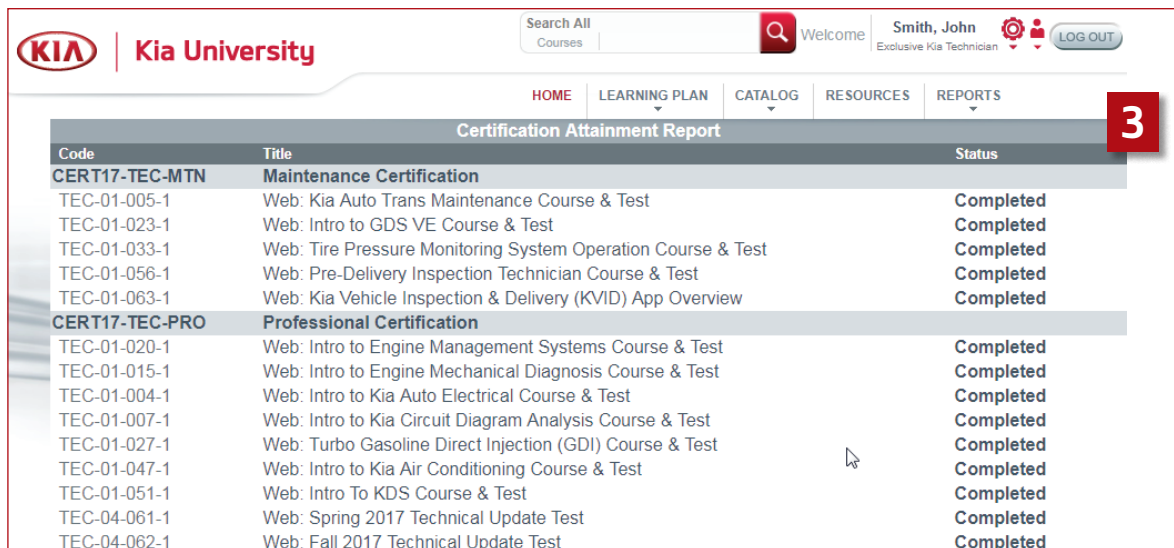
Schedule subject to change without notice.

2017 ELITE CERTIFICATION

Year-end is just around the corner. Complete your training and certification requirements now before it's too late! If you wait until December, the instructor-led courses you need may not be available due to high demand.

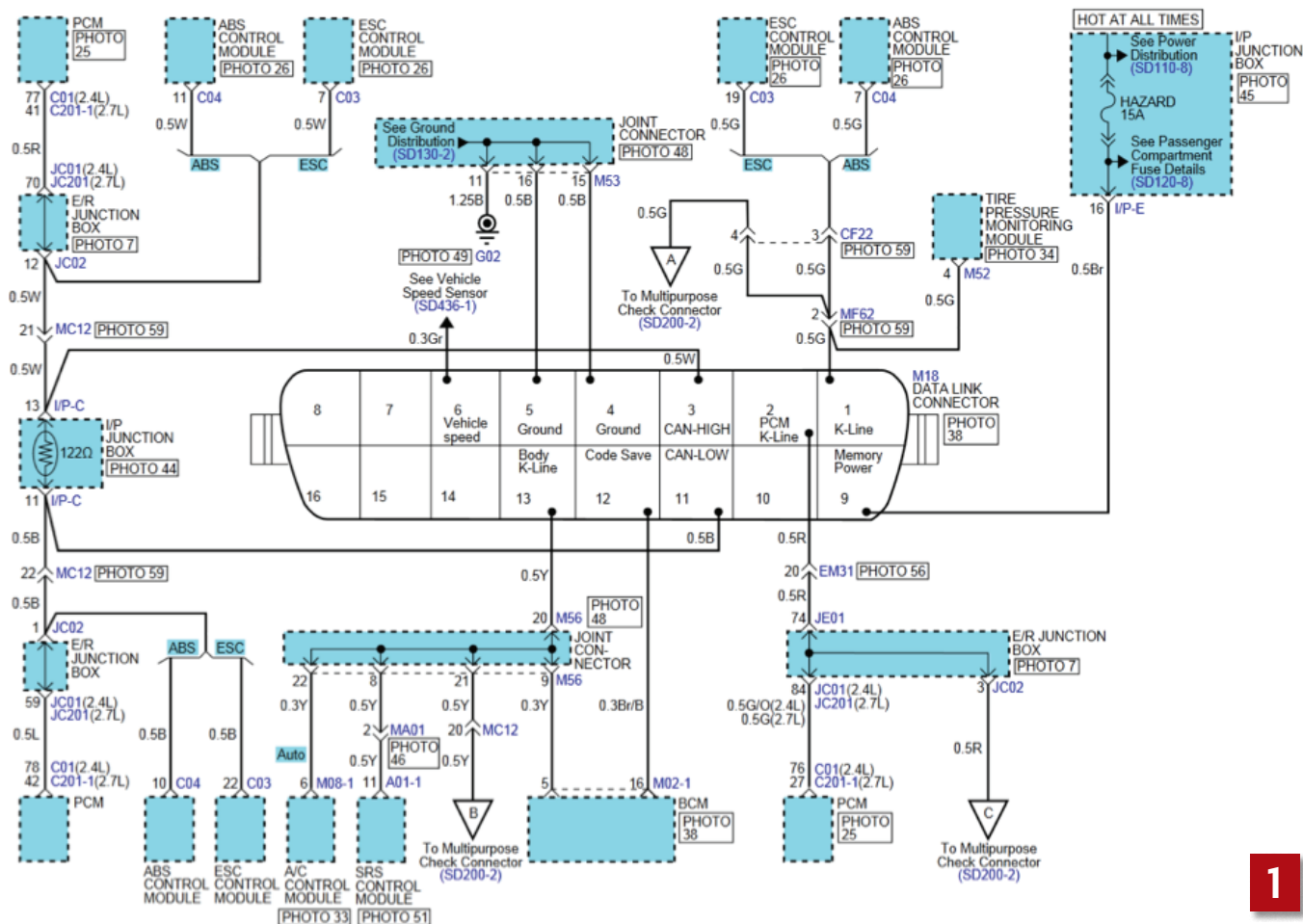
As a reminder, you must complete all minimum training requirements for your primary job position by December 31, 2017 to receive rewards and recognition for your professional development.

1. To view your certification progress, visit the **Kia Performance Center** through KDealer.com.
2. From the KDealer.com home page, select **View All** in the **My Favorites** section and then select the **Kia Performance Center** icon (KPC2).
3. On the Kia Performance Center home page, select **VIEW PROGRESS**.

Kia University		
Code	Title	Status
CERT17-TEC-MTN Maintenance Certification		
TEC-01-005-1	Web: Kia Auto Trans Maintenance Course & Test	Completed
TEC-01-023-1	Web: Intro to GDS VE Course & Test	Completed
TEC-01-033-1	Web: Tire Pressure Monitoring System Operation Course & Test	Completed
TEC-01-056-1	Web: Pre-Delivery Inspection Technician Course & Test	Completed
TEC-01-063-1	Web: Kia Vehicle Inspection & Delivery (KVID) App Overview	Completed
CERT17-TEC-PRO Professional Certification		
TEC-01-020-1	Web: Intro to Engine Management Systems Course & Test	Completed
TEC-01-015-1	Web: Intro to Engine Mechanical Diagnosis Course & Test	Completed
TEC-01-004-1	Web: Intro to Kia Auto Electrical Course & Test	Completed
TEC-01-007-1	Web: Intro to Kia Circuit Diagram Analysis Course & Test	Completed
TEC-01-027-1	Web: Turbo Gasoline Direct Injection (GDI) Course & Test	Completed
TEC-01-047-1	Web: Intro to Kia Air Conditioning Course & Test	Completed
TEC-01-051-1	Web: Intro To KDS Course & Test	Completed
TEC-04-061-1	Web: Spring 2017 Technical Update Test	Completed
TEC-04-062-1	Web: Fall 2017 Technical Update Test	Completed

JOE'S CORNER ANOTHER ONE RIDES THE BUS



1

Around 2006 Kia started using a High-Speed CAN line, which replaced older Low-Speed lines **1**.

Referred to as Chassis Can or C-CAN, it was a way to share critical information needed between the ECM/PCM and the ABS/ESC control modules.

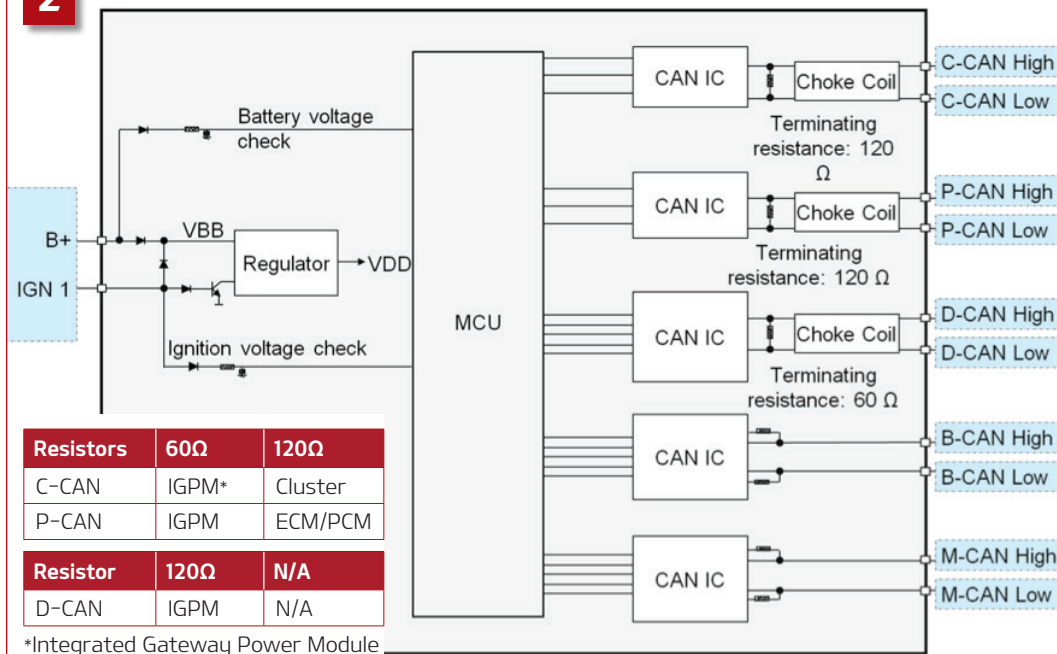
It uses two 120Ω Terminating Resistors wired in parallel. Located in the ECM/PCM and in the I/P Junction Block they balance the line at 60Ω, which allows the GDS/KDS to communicate with the modules.

In 2016 Kia added Diagnostic CAN (D-CAN) and Powertrain CAN (P-CAN), a major departure from previous systems **2**.

D-CAN only uses a 60Ω Terminating Resistor as its only function is to communicate with GDS/KDS.

Continued next page

2



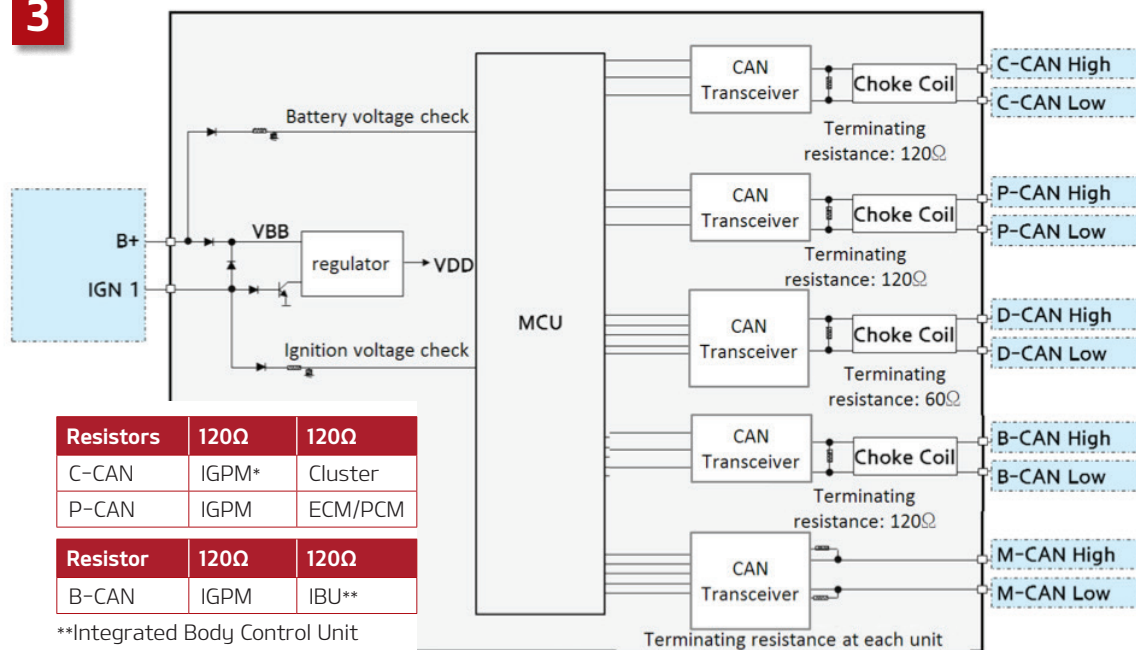
Resistors	60Ω	120Ω
C-CAN	IGPM*	Cluster
P-CAN	IGPM	ECM/PCM
Resistor	120Ω	N/A
D-CAN	IGPM	N/A

*Integrated Gateway Power Module

JOE'S CORNER

ANOTHER ONE RIDES THE BUS (CONTINUED)

New for 2018,
B-CAN has changed
from Low-Speed to
High-Speed **3**.

3

UPDATED TOOL AND EQUIPMENT WEBSITE!

www.KiaSpecialTools.com has been refreshed and updated with a new look and lots of new features! Aside from having a much cleaner look and feel, here are some of the new additions that will make your tool and equipment purchase experience simple, stress free, and more enjoyable.

- Expanded Search Capabilities:
 - Spelling check and correction function.
 - 'Sort by' function added to search results
- Slide show of new and important information on the Home Page
- 'Opt In' page to be included in email distributions to receive promotional information
- Information regarding recent auto-shipments is now available
- 'Featured Products' section on home page to highlight new tools and special promotions
- Mobile friendly so you can view the website and place orders on your smartphone

Visit www.KiaSpecialTools.com to explore these new features today!

Approved Dealer Tool and Equipment Program

888-542-1011

Shopping Cart: 0 items \$0.00

SEARCH

HOME

ONLINE CATALOG

PROGRAM INFO

FACILITY PLANNING

ADDITIONAL RESOURCES

LOGIN

REGISTER

PURCHASE KIA APPROVED TOOLS AND EQUIPMENT HERE.

DEALERS: Login for dealer specific pricing and content.

Featured Products

FEATURED

BSAX360 Impact C3 Glove, 1 Pair Medium

Item Number: JSPBSIM06009

FEATURED

AX360 C3 Glove, 1 Pair Large

Item Number: JSPBS06010

FEATURED

Large Replacement Glove Only

Item Number: SFGEO11R09

FEATURED

X-Large Replacement Glove Only

Item Number: SFGEO11R10

FEATURED

XXL Replacement Glove Only

Item Number: SFGEO11R11

FEATURED

Electric Glove Inspection Tool

Item Number: SFGVT12

Promotions

ECO-COASTING (ECOASTING) & ECO-DAS (DRIVING ASSISTANT SYSTEM) OVERVIEW – CUSTOMER TIP

This article provides information regarding Eco-Coasting Guide (eCoasting) and Eco-Driving Assistant System (DAS) found on 2017-18MY Niro (DE HEV), Niro Plug-in (DE PHEV), Optima Hybrid (JF HEV), and Optima Plug-in (JF PHEV) vehicles.

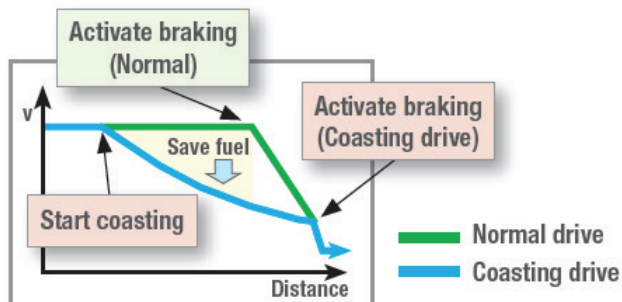
Eco-Coasting (eCoasting) is a predictive energy control system that works in conjunction with the UVO with Premium Navigation (AVN 4.0/5.0) head unit. With the vehicle's driving mode in ECO, eCoasting enabled, and an active destination set on the Navigation, the system will predict the road conditions and encourage the driver to take their foot off the accelerator to allow the vehicle to coast and regenerate with the help of the EV motor. This coasting guide helps prevent unnecessary fuel consumption.

When the coasting guide is active, the driver will be notified with an audible chime and a "Coast" lamp () on the cluster. The audible chime can be turned ON or OFF within the cluster settings. This notification may surprise some customers if they are unaware of this feature and they may mistake it for a concern.

Customer concerns may include:

- Knowing the Eco-Coasting feature system exists but has not seen it active before
- A warning message randomly appears on the cluster and quickly disappears
- A warning chime is heard for no apparent reason with no other vehicle concerns

Coasting Guide



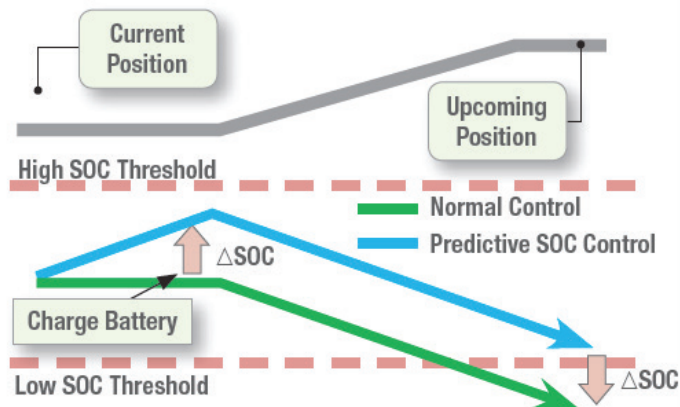
→ Unnecessary Fuel Consumption

→ Fuel Economy: 0~3% improved

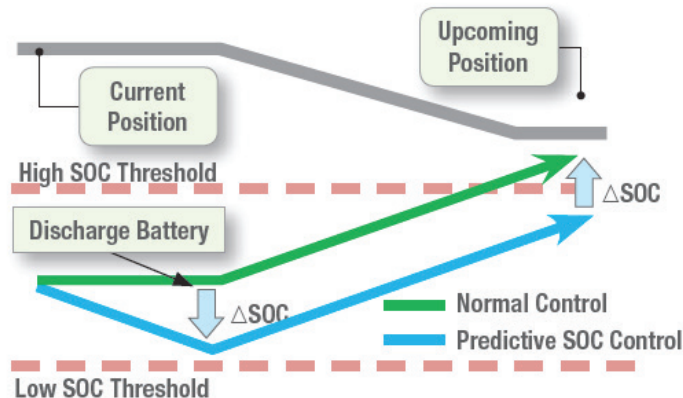
Eco-Driving Assistant System (DAS) is another predictive energy control system that works in conjunction with the UVO with Premium Navigation (AVN 4.0/5.0) head unit. With the vehicle's driving mode in ECO and an active destination set on the Navigation, the system will analyze the topography of the route, such as elevation, slope, and curvature and automatically adjust the state of charge (SOC) based on the predicted road conditions.

These adjustments are all done automatically without any input from the driver. Before entering an uphill section, the system will add an additional charge to the hybrid battery to account for the additional load that will be placed on the vehicle during the uphill climb. Conversely, when a downhill section is predicted, the system will increase the use of the EV drive mode. As the vehicle descends downhill, the vehicle will charge to the normal range by using downhill regenerative braking.

Predicting an uphill road



Predicting a downhill road



Reminders:

- Eco-Coasting and Eco-DAS are only functional when an active destination is set on the UVO with Premium Navigation (AVN 4.0/5.0) head unit, the vehicle drive mode is in ECO, and the coasting guide is enabled.
- The eCoasting feature, audible notification, and distance-to-activation can be turned ON/OFF or adjusted through the cluster settings

Please refer to PitStop PS522.

DIAGNOSING INTERLOCK CIRCUIT DTCs ON HYBRID AND ELECTRIC VEHICLES

Certain High Voltage (HV) connections on Kia Hybrid Electric Vehicles (HEVs) and Electric Vehicles (EVs) include an interlock circuit (See Fig. 1). Think of an interlock circuit as a series-type circuit monitored by a control module.

When a HV connector containing an interlock circuit becomes disconnected, circuit continuity in the interlock circuit is lost, a Diagnostic Trouble Code (DTC) is set and the vehicle's HV System is shut down.

When diagnosing codes related to interlock circuits, you can narrow down the fault location by observing which module stored the code (See Table 1).

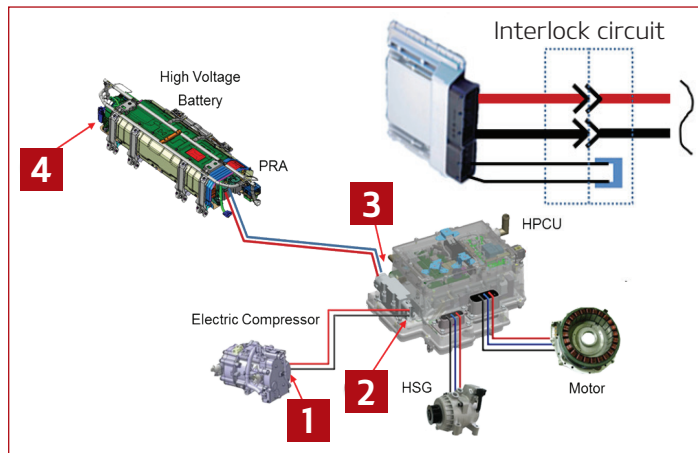


Fig. 1: Kia Niro Interlock Circuit.

1 Compressor Connection **2** HPCU to Compressor Connection
3 Battery to HPCU Connection **4** Safety Plug Connection

DTC	Control Module	Interlock Circuit to Check
P0A0D	Battery Management System (BMS)	Safety plug (fig. 3); Battery to battery HV connector (fig. 5)
P0A0D	Motor Control Unit (MCU)	HV supply connector at HPCU (fig. 4); E-Comp HV connector at HPCU (fig. 4)
B247013	Air Conditioning Control Module (ACCM)	E-Comp HV connector at compressor (fig. 6)

Table 1. Interlock DTC Chart



Fig. 3. Niro Safety Plug

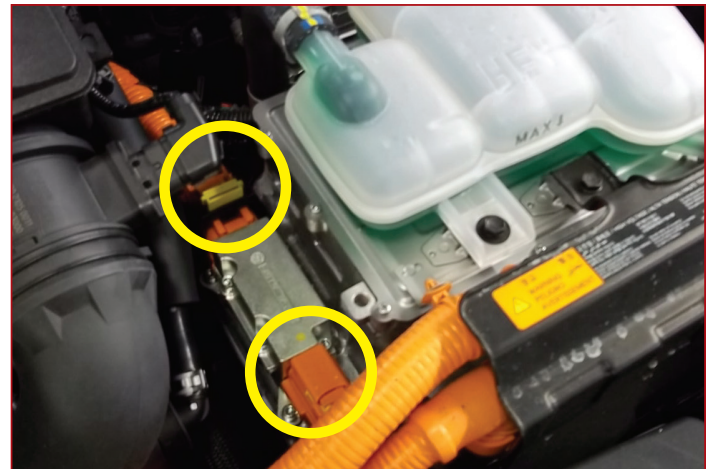


Fig. 4. Niro HV connections at HPCU



Fig. 5. Optima PHEV (JF) battery-to-battery HV connector in trunk

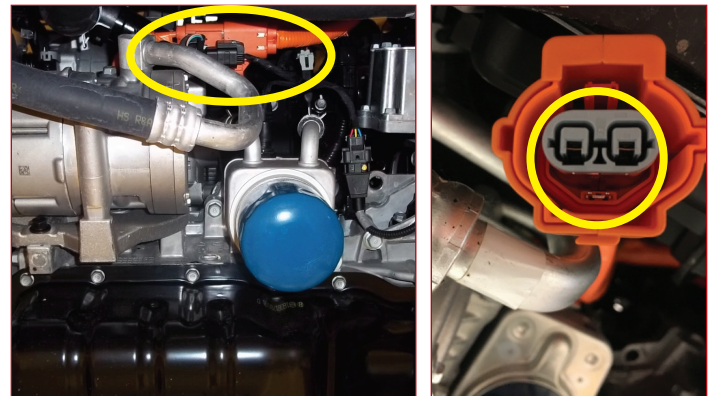


Fig. 6. JF HEV Optima HV Connector at E-comp

When diagnosing Interlock codes, begin by determining what module stored the code and verify the related HV connector is properly plugged in. Next, inspect the interlock pins for damage and proper pin tension.

First, follow all HV service precautions. Servicing the HV system requires special attention and handling procedures

Remove the Hybrid Control System Safety Plug by referring to the "Hybrid Control System → High Voltage Shut-off Procedures" chapter in the applicable Shop Manual on KGIS.

Continued next page



DANGER

Failure to follow the High Voltage Shut-off Procedure may result in serious electrical injuries.

DIAGNOSING INTERLOCK CIRCUIT DTCS ON HYBRID AND ELECTRIC VEHICLES (CONT'D)

Aside from the HV connector itself, some interlock circuits such as the Electric Compressor (E-Comp) interlock circuit and safety plug circuit may have additional connectors and wiring to inspect (shown in fig.7). If you are diagnosing an interlock concern at the Hybrid Power Control Unit (HPCU), there are no additional circuits/connectors to be tested once you have inspected both possible HV connectors.

Note: HV supply connector at the HPCU and the HV E-Comp connector at the HPCU are both part of the same series circuit. The circuit itself is internal to the HPCU and will not show up in an ETM. The module monitoring these interlocks (MCU) can not distinguish which of the two connectors caused the loss of continuity.

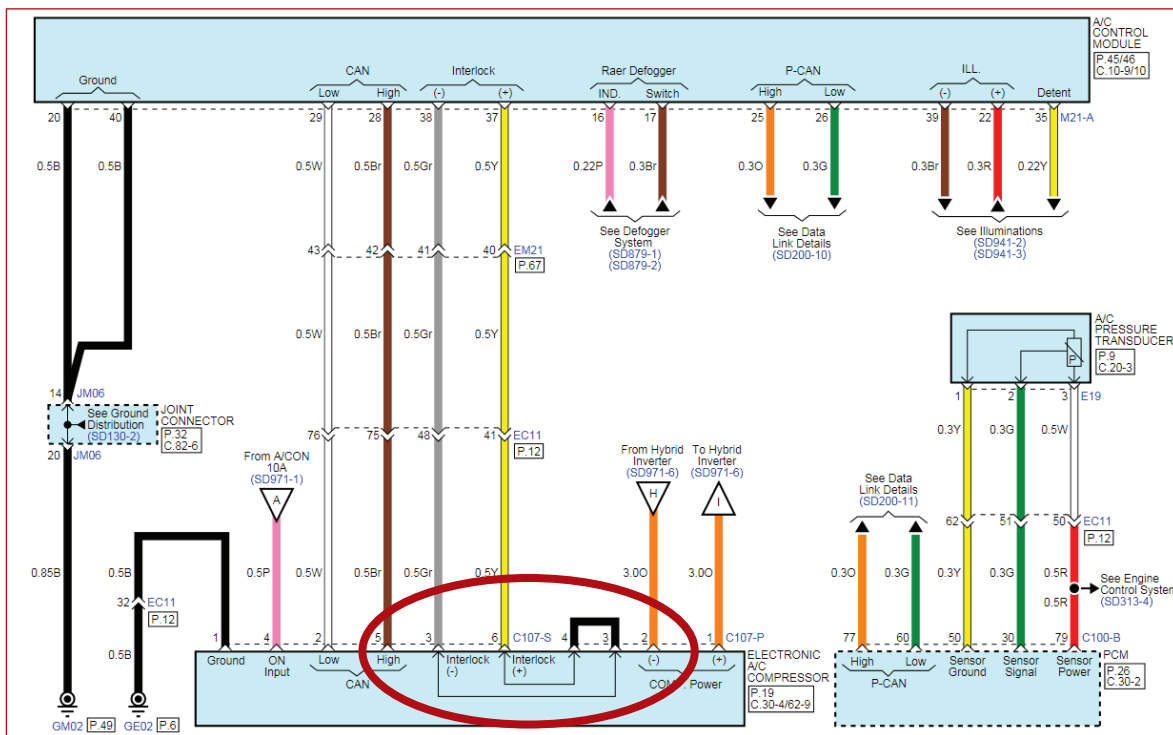


Fig. 7. 2017 JF HEV Optima electric A/C compressor interlock

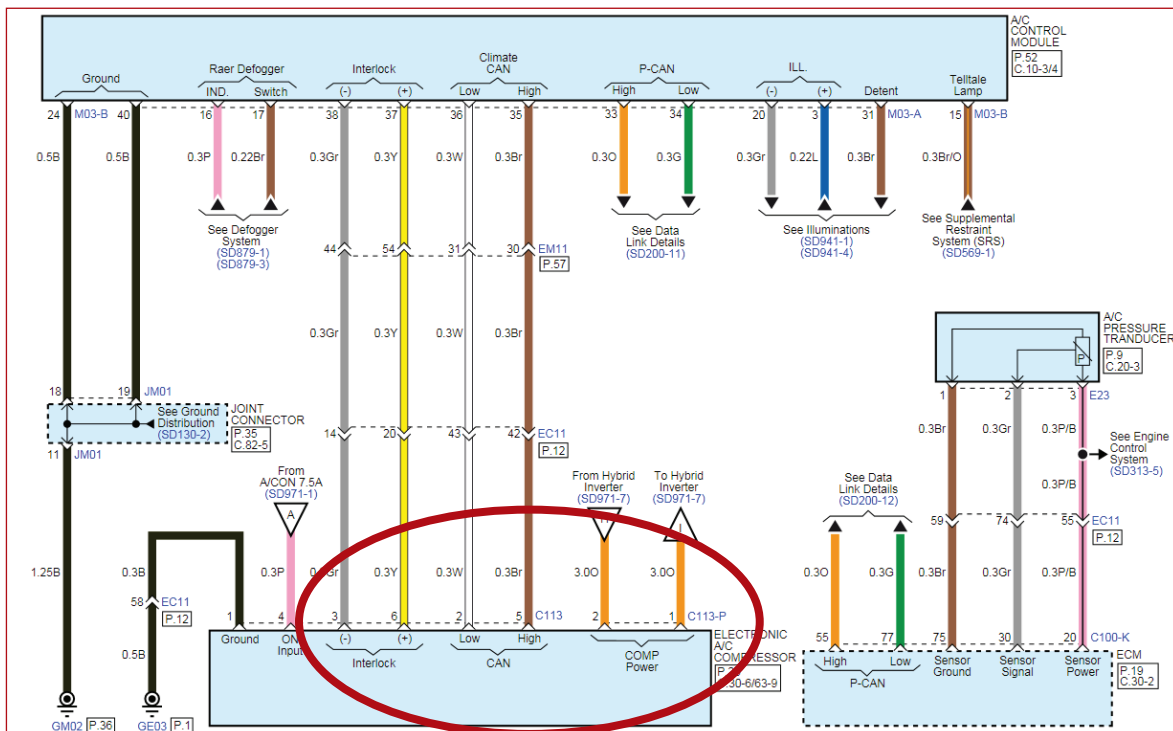
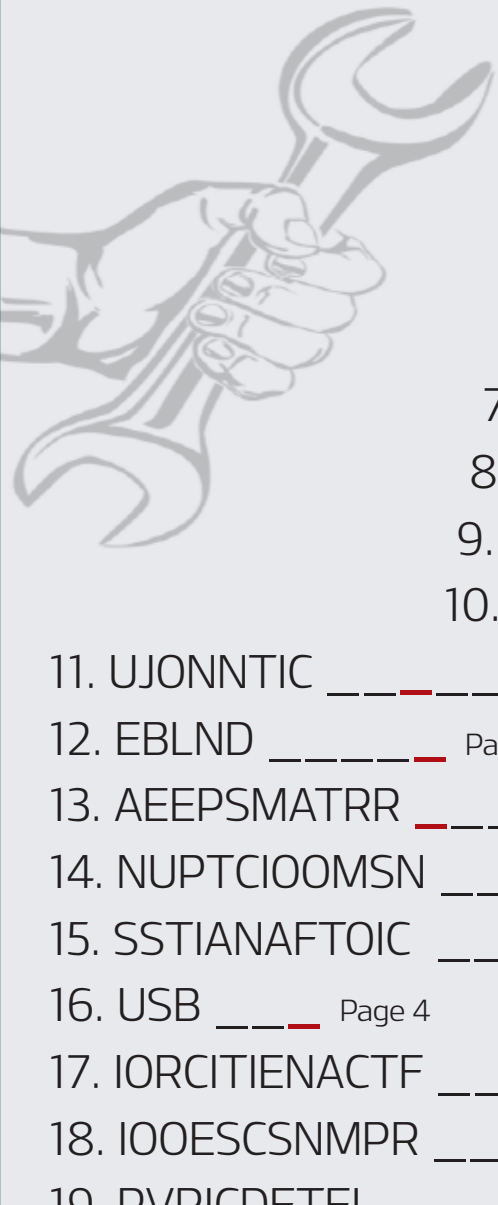


Fig. 8. 2017 DE HEV Niro Interlock (ETM only shows part of the circuit)

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 13.



1. UDEADTP _____ Page 5
2. OTASCGIN _____ Page 5
3. ERTABYT _____ Page 2
4. HYBDIR _____ Page 1
5. DLWNLOHI _____ Page 6
6. OYILHDA _____ Page 3
7. LOEDUM _____ Page 4
8. IOMOTONARPL _____ Page 5
9. CKTELONRI _____ Page 7
10. CENANITIH _____ Page 1
11. UJONNTIC _____ Page 4
12. EBLND _____ Page 10
13. AEEPSMATRR _____ Page 14
14. NUPTCIOOMSN _____ Page 6
15. SSTIANAFTOIC _____ Page 1
16. USB _____ Page 4
17. IORCITIENACTF _____ Page 3
18. IOOESCSNMPR _____ Page 2
19. PVRICDETEI _____ Page 6
20. ARNYTWAR _____ Page 1
21. ISGACDTINO _____ Page 4
22. URECTLS _____ Page 6
23. RRADA _____ Page 13
24. ERSYUV _____ Page 1

The All-New Stinger is the

" _____ "

_____ "

Solution, page 13

TESTING GASOLINE FOR ETHANOL CONTENT

In the last TechTimes issue, we discussed the differences between E10 and E15 and we also explained how these two fuel blends can affect engine performance. In this issue, we will discuss how to check the amount of Ethanol (Alcohol) in gasoline.

The following procedure describes testing for excess alcohol in the fuel when the vehicle has a drivability or fuel trim concern.

Warning: This test involves handling flammable liquids. Always follow all safety-related procedures.

In order to test for alcohol/ethanol content, a graduated glass or fuel-resistant-plastic cylinder needs to be used. This type of container can easily be sourced from any major online retailers such as Amazon, eBay, etc. Note that these online retailers also sell Ethanol tests kits which alternatively can also be used to perform the following procedure.

For this test, we used a 100-ml graduated glass cylinder.

- Using the Kia fuel pressure gauge (SST FPG2200), push the release valve to bleed a sample of gasoline from the affected vehicle into the graduated cylinder.



Fig. 1. Graduated glass cylinder filled with Gasoline to 90-ml mark



Fig. 2. Graduated glass cylinder filled with gasoline and water to the 100-ml mark showing the alcohol concentration

- Fill the cylinder with gasoline up to the 90-ml mark (See fig. 1)
- Add 10-ml of water to bring the total liquid volume up to 100-ml
- Securely install a plug/stopper on the cylinder and shake vigorously for 10 - 15 seconds, then carefully loosen the plug/stopper in order to release the pressure.

If alcohol is present, the volume of the alcohol/water will increase to above the 10-ml mark in the cylinder (See fig. 2).

The level to above the 10-ml mark is equal to the percentage of alcohol in the fuel.

Example: 15-ml = 5% alcohol, 20-ml = 10% alcohol.

Figure 3 indicates that the gasoline sample tested contains approximately 8% alcohol/ethanol. Figure 4 indicates that the gasoline sample tested contains approximately 10% alcohol/ethanol concentration.

NOTE: Always dispose of the fuel samples using proper safety and environmental procedures and regulations.



Fig. 3. This gasoline sample tested contains approximately 8% alcohol/ethanol

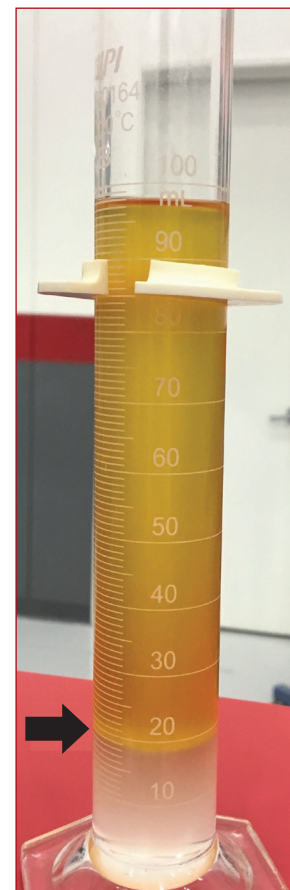


Fig. 4. Approximately 10% alcohol/ethanol concentration

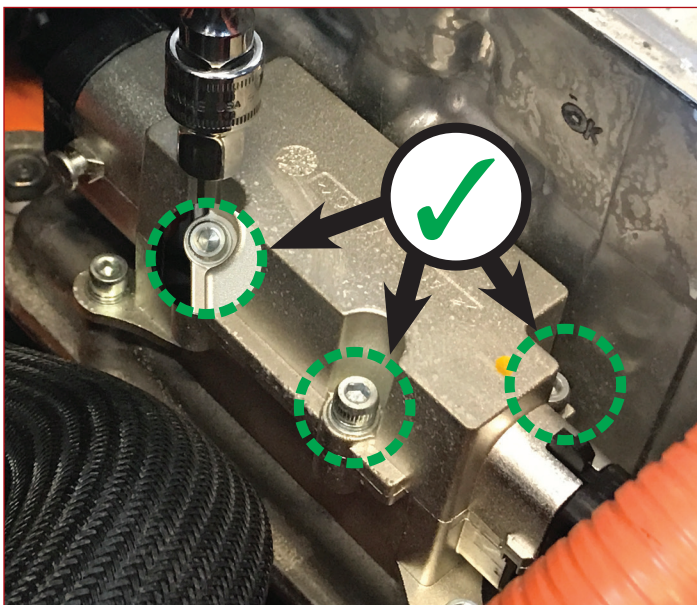
HYBRID POWER CONTROL UNIT 30A DC FUSE

This article provides information on the 2017MY Optima Hybrid (JF HEV), Optima Plug-in Hybrid (JF PHEV), and Niro (DE HEV) vehicles that are equipped with a replaceable 30A fuse for the Electronic Compressor (E-comp). This fuse is easily accessible under a cover between the power cable connector and inverter cable, as shown below. However, the housing for the fuse is internally bolted to the HPCU assembly and is only available as part of the HPCU assembly. Forcibly removing the fuse housing assembly will result in damaging the internal HPCU terminals which will require replacement of the entire HPCU assembly and is not covered under Warranty.

Follow the procedure below to inspect and/or replace the fuse, or refer to the “Hybrid Control System → Hybrid Control System → DC Fuse → Repair procedures” chapter in the applicable Shop Manual on KGIS.

DANGER

When performing this procedure, follow all EV battery safety precaution procedures found in the “General Information → General Safety Information and Caution” chapter in the Shop Manual on KGIS and wear all required Personal Protection Equipment (PPE). Failure to follow the safety instructions may result in serious electrical injuries.

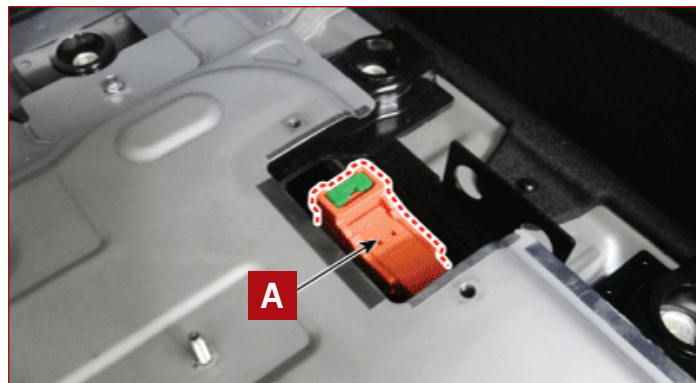


Inspection/Replacement Procedure:

1. Remove the Hybrid Control System Safety Plug **A** by referring to the “Hybrid Control System → High Voltage Shut-off Procedures” chapter in the applicable Shop Manual on KGIS.

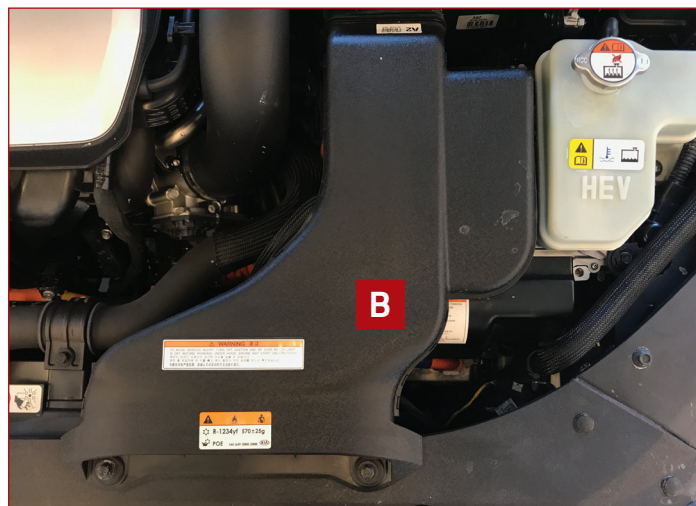
DANGER

Failure to follow the High Voltage Shut-off Procedure may result in serious electrical injuries.

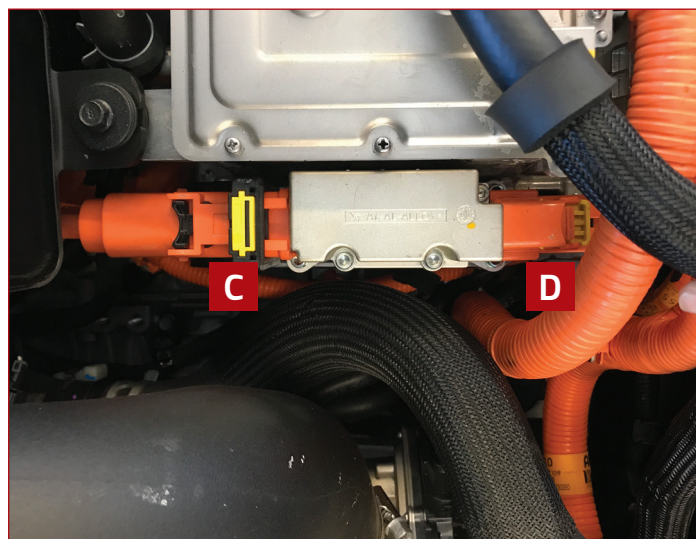


Optima Plug-in Hybrid (JF PHEV) shown. Location of Safety Plug may be different on other vehicles.

2. Open the hood and remove the air intake duct **B** (if applicable).



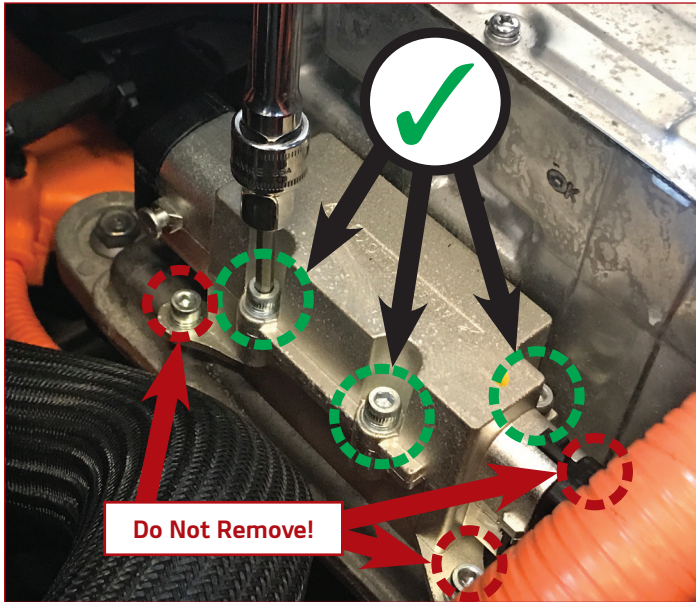
3. Disconnect the power cable **C** and inverter cable **D**.



Continued next page

HYBRID POWER CONTROL UNIT 30A DC FUSE (CONTINUED)

4. Remove the upper three (3) cover retaining bolts marked (✓) in the photo below and remove the cover. **DO NOT** remove the lower fuse housing bolts (circled in red).



⚠ NOTICE

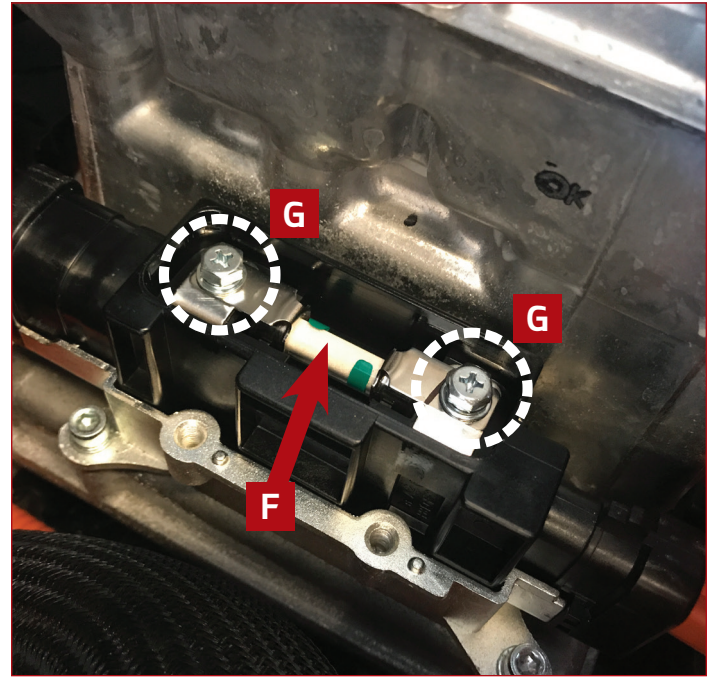
Removal of the three lower fuse housing bolts (circled in red, above) and forcibly removing the housing assembly will result in a damaged HPCU assembly!

Tightening torque for cover bolts (✓): 43.2 – 60 in. lb. (4.9 – 6.9 Nm, 0.5 – 0.7 kgf.m).

5. With pliers, remove the plastic cover **E** (below).
6. To inspect the fuse, check the continuity between ends of the fuse **F**.

Continuity Specification: Less than 1Ω (at 68°F, 20°C)

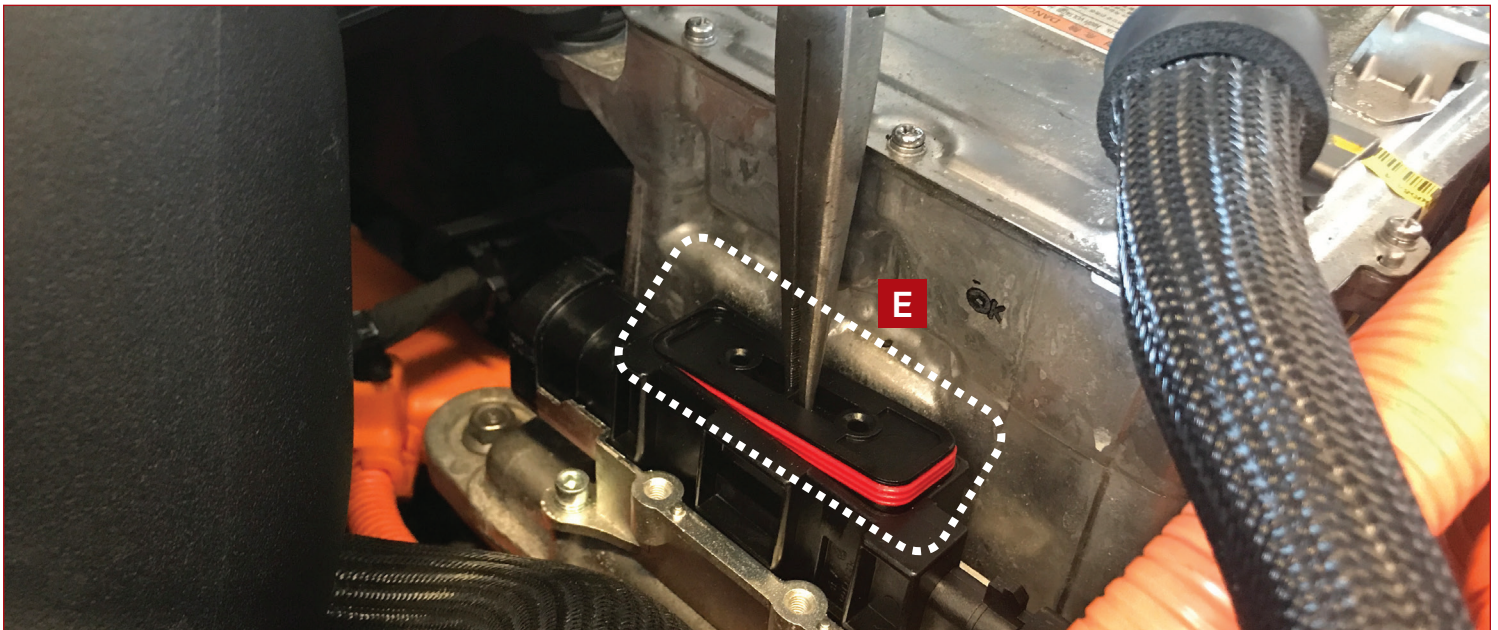
To replace the fuse, remove the two (2) fuse retaining bolts **G** and remove the old fuse **F**, then install the new fuse.



Tightening torque for fuse bolts G: 82.8 – 92.4 in.lb (9.3 – 10.4 Nm, 0.95 – 1.06 kgf.m).

7. Reinstall all removed components in the reverse order of removal.
8. Confirm proper operation of the eCompressor.

Please refer to PitStop PS520



SPORTAGE AEB RADAR CALIBRATION

The Sportage (QL) is available with Autonomous Emergency Braking (AEB) which is designed to detect vehicles ahead and, in certain situations, apply brake pressure, which may prevent a collision or reduce the severity of an unavoidable one.

The system detects the risk factors on the road by using a front-mounted radar and inputs from other systems/components (See Fig. 1), to warn the driver and if necessary automatically apply the brakes.

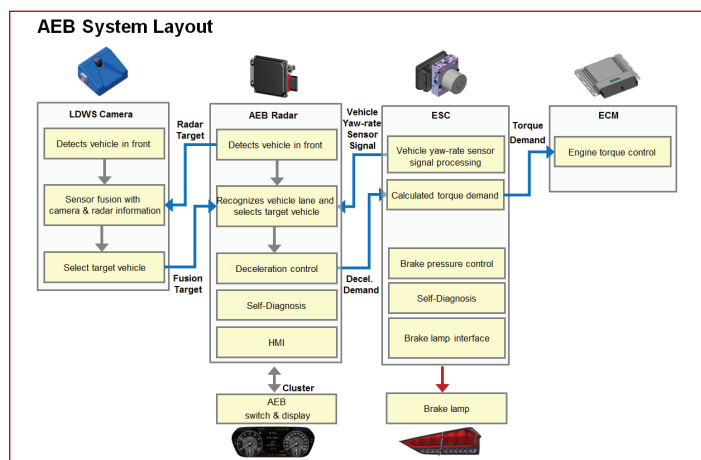


Fig. 1. AEB System Overview

The AEB Radar Module **A** may need recalibration during service due to a variety of factors such as:

- Removal/reinstallation of the Radar module and bracket due to vehicle repairs (Body work)
- Replacing the Radar Module (new unit) due to failure
- Radar module and/or holding bracket damage due to impact
- Replacing the Steering Angle Sensor (SAS)

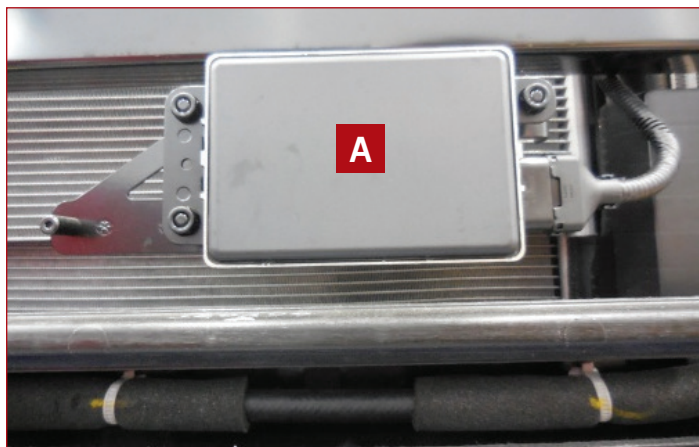


Fig. 2. AEB Radar Module

If you encounter any of the above situations or conditions, the following procedures must be performed in the correct order:

- AEB Radar Module Variant Coding with KDS
- Radar Module Vertical Calibration Manual Adjustment
- AEB Radar Sensor Alignment (Driving)

To perform the Radar Module Vertical Calibration manual adjustment, you will need Special Service Tool (SST) 09K64-3T000 - Smart Cruise Control Level Meter and the vehicle's front bumper cover will need to be removed.

As shown on Fig. 3, the SST is placed with the red arrow (Fig. 3) pointing up on the radar unit. If the vertical alignment is out of specification (Specification is 90°), turn the adjustment screw using a Torx-T20 drive to align the Radar module.

Once the Radar module has been aligned to specifications, the front bumper cover can be reinstalled and the vehicle will have to be taken on a test drive in order to perform the last step, i.e., AEB Radar Sensor Alignment (Driving).

Before performing the AEB Radar Sensor Alignment (Driving), verify the following:

- AEB module shows DTC C162078 - Radar Alignment Fail (History)
- Instrument cluster Message center is displaying the message "Check AEB System" and the yellow "Master Warning" and "AEB Fault" Warning lights are illuminated.

Once the above steps have been confirmed, prepare the vehicle for an approx. 20 minute test drive.

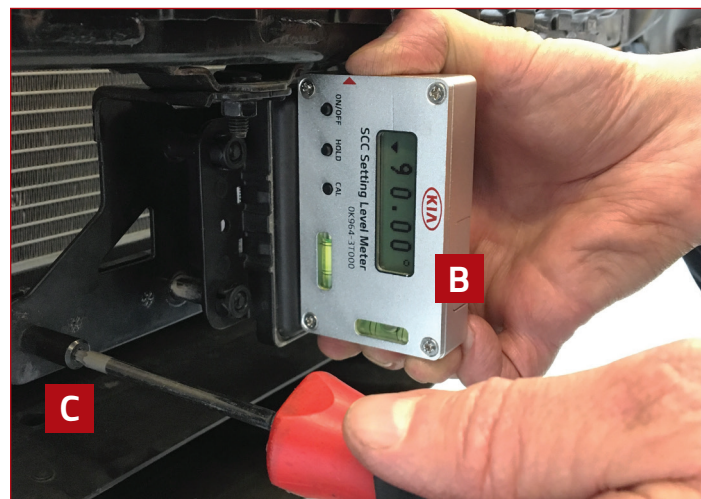


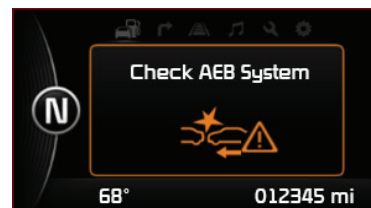
Fig. 3. SCC Level Meter (SST 09K64-3T000) **B**; Adjustment Screw **C**

Begin by starting the engine and connecting the KDS and selecting SW Management - Radar Sensor Alignment SCC/AEB.

The next screen will ask you to select which type of alignment needs to be performed:

- C1 - STOP MODE
- C2 - DRIVING MODE

Fig. 5. AEB System Instrument Cluster Message



continued next page

SPORTAGE AEB RADAR CALIBRATION (CONTINUED)

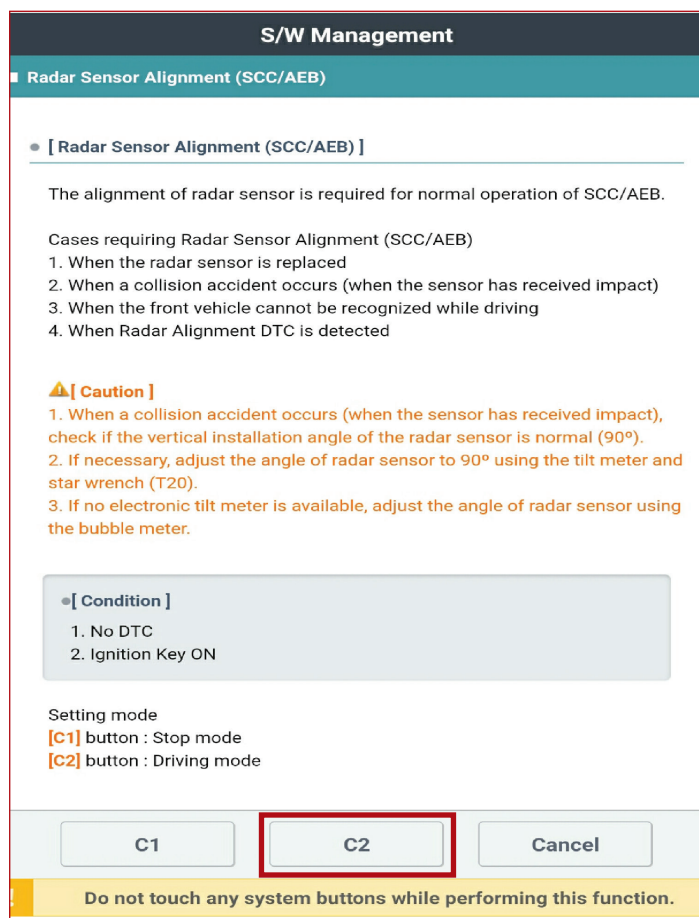


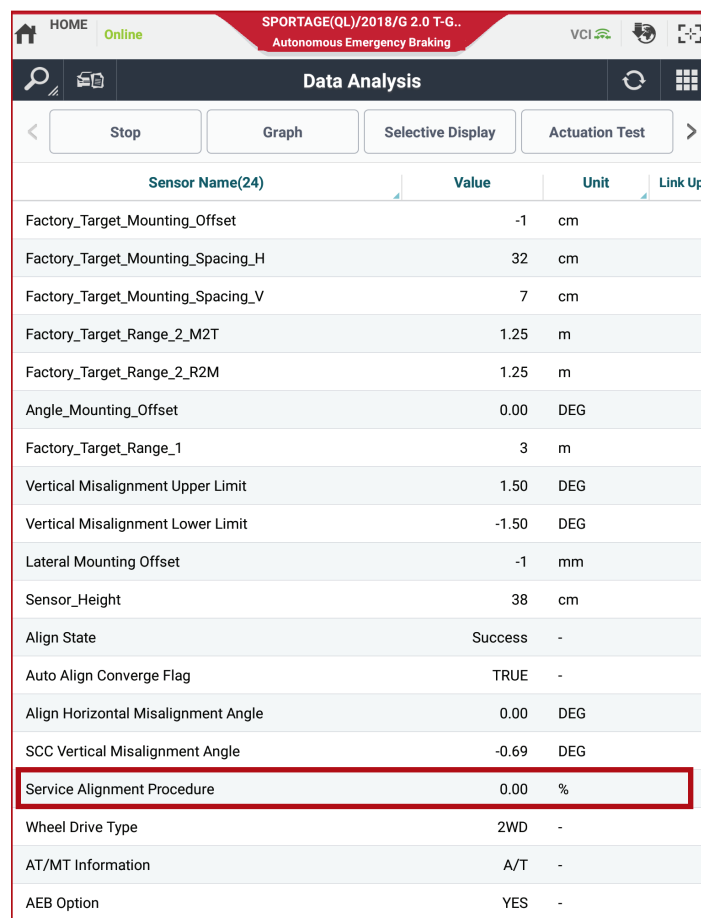
Fig. 6. KDS Data Analysis AEB System Parameters

Select C2 (see Fig. 6) and the next screen will instruct you to drive the vehicle for approx. 20 minutes at speeds above 50 km/h (approx. 30 mph).

NOTE: At this point do NOT turn the engine off. Turning the engine off will terminate the calibration procedure.

Test-drive the vehicle preferably on a Interstate on multi-lane type of Highway in order for the Radar module to perform the self-calibration.

While performing the test drive, have an assistant monitor the AEB system Data Analysis parameters, specifically the parameter "Service Alignment Procedure" (outlined in Fig. 7).



Sensor Name(24)	Value	Unit	Link Up
Factory_Target_Mounting_Offset	-1	cm	
Factory_Target_Mounting_Spacing_H	32	cm	
Factory_Target_Mounting_Spacing_V	7	cm	
Factory_Target_Range_2_M2T	1.25	m	
Factory_Target_Range_2_R2M	1.25	m	
Angle_Mounting_Offset	0.00	DEG	
Factory_Target_Range_1	3	m	
Vertical Misalignment Upper Limit	1.50	DEG	
Vertical Misalignment Lower Limit	-1.50	DEG	
Lateral Mounting Offset	-1	mm	
Sensor_Height	38	cm	
Align State	Success	-	
Auto Align Converge Flag	TRUE	-	
Align Horizontal Misalignment Angle	0.00	DEG	
SCC Vertical Misalignment Angle	-0.69	DEG	
Service Alignment Procedure	0.00	%	
Wheel Drive Type	2WD	-	
AT/MT Information	A/T	-	
AEB Option	YES	-	

Fig. 7. KDS Data Analysis AEB System Parameters

As you begin the test drive, the Service Alignment Procedure parameter will start at 0% and slowly increase as the vehicle is driven.

NOTE: Always be sure to follow all posted Speed Limits and obey all traffic laws.

Once the parameter has reached 100%, the two instrument cluster warning lights should immediately turn off. At this point the Radar Module has finished its self-calibration.

Return back to the dealer and confirm that DTC C162078 is no longer displaying (either active or history).

WORD SCRAMBLE SOLUTION

Here are the solutions to the Word Scramble puzzle on page 9.

The All-New Stinger is the
**"NEW PARADIGM OF
 GRAN TURISMO"**

19. PREDICTIVE
 20. WARRANTY
 21. DIAGNOSTIC
 22. CLUSTER
 23. RADAR
 24. SURVEY

10. TECHNICIAN
 11. JUNCTION
 12. BLEND
 13. PARAMETERS
 14. CONSUMPTION
 15. SATISFACTION
 16. BUS
 17. CERTIFICATION
 18. COMPRESSION

1. UPDATED
 2. COASTING
 3. BATTERY
 4. HYBRID
 5. DOWNHILL
 6. HOLIDAY
 7. MODULE
 8. PROMOTIONAL
 9. INTERLOCK