



GROUP	MODEL
ELE	2013-2016MY Optima (TF HEV)
NUMBER	DATE
273	January 2023

TECHNICAL SERVICE BULLETIN

SUBJECT:

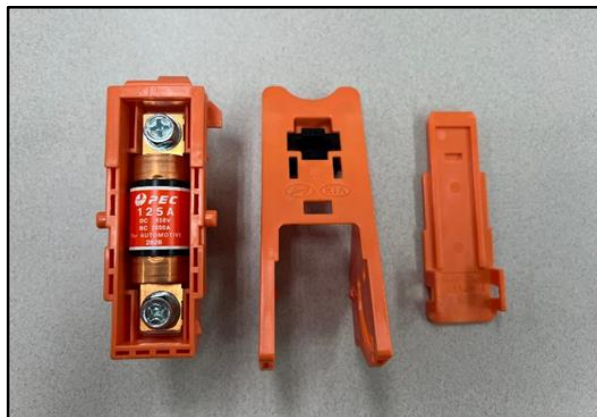
HIGH-VOLTAGE BATTERY SAFETY PLUG FUSE INSPECTION AND REPLACEMENT

This bulletin provides information associated with the 'Hybrid System Warranty Extension Program' (WTY029) to inspect and, if necessary, replace the High Voltage Battery (HVB) Safety Plug Fuse Assembly or Main Fuse on 2013-2016MY Optima Hybrid (TF HEV) vehicles produced from September 27, 2012 through July 22, 2015. The procedure outlined in this bulletin is to replace any non-genuine HVB Safety Plug Fuse and to address "Hybrid System Warning" message(s) with DTC(s) P1B77 and/or P1B25 stored in the subject vehicles. The vehicle's warranty for this issue will be extended from 10 years/100,000 miles to 15 years/150,000 miles, whichever comes first, starting from the date the vehicle was first put into service. This extension to Kia's Hybrid System Warranty does not alter the limitations and exclusions contained in that Hybrid System Warranty including abuse, neglect, or external damage. Follow the procedure outlined in this publication to inspect and, if necessary, replace the HVB Safety Plug Fuse Assembly or Main Fuse.

DTC Description:

P1B77: High Voltage Precharging Fault

P1B25: High Voltage Path Fault



NOTICE

Vehicles within 10/100 warranty coverage should utilize KGIS for diagnosis and LTS for the applicable Labor Op Code. This TSB is specifically applicable to vehicles that exceed the 10/100 mileage parameter noted above.

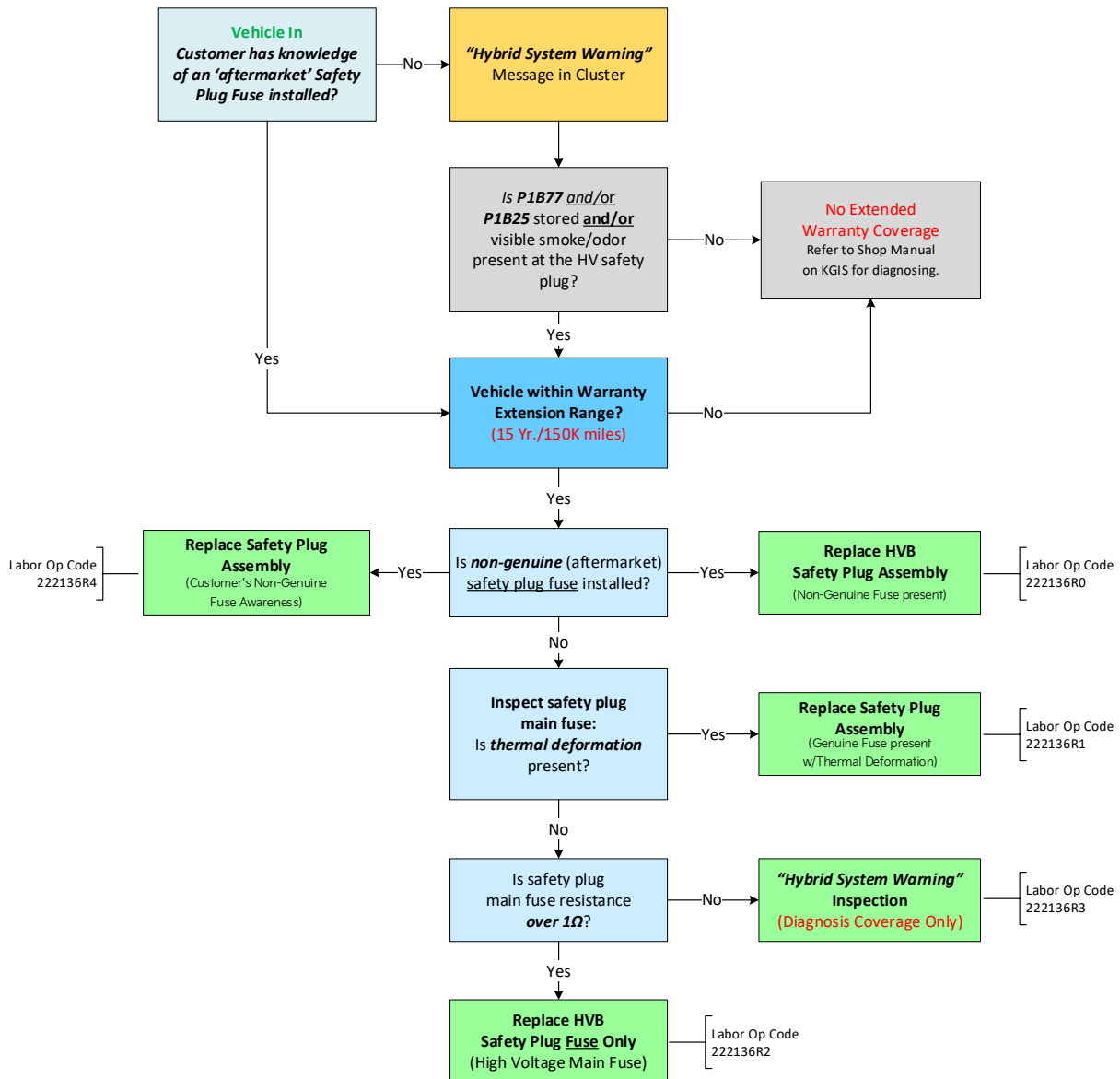
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Flowchart:

IMPORTANT

A vehicle may not come in with the "Hybrid System Warning" message displayed in cluster BUT, the customer brought vehicle in knowing that an 'aftermarket' HV battery fuse is presently installed in the vehicle, then confirm that the Extended Warranty of 15 Yr./150K Mile is applicable to replace the Safety Plug Fuse Assembly using 'Op Code' 222136R4 (No DTC inspection required).



NOTICE

Vehicles within standard 10 Yr./100K Mile warranty coverage should utilize KGIS for diagnosis and LTS for the applicable Labor Op Code. This TSB is specifically applicable to vehicles that exceed the 10 Yr./100K Mileage parameter noted above.



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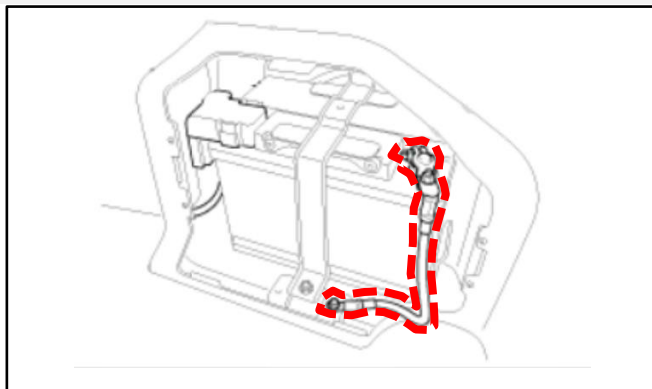
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Inspection and Replacement Procedure:

1. Disconnect the auxiliary 12V battery negative (-) cable located in the rear cargo area.

⚠ DANGER

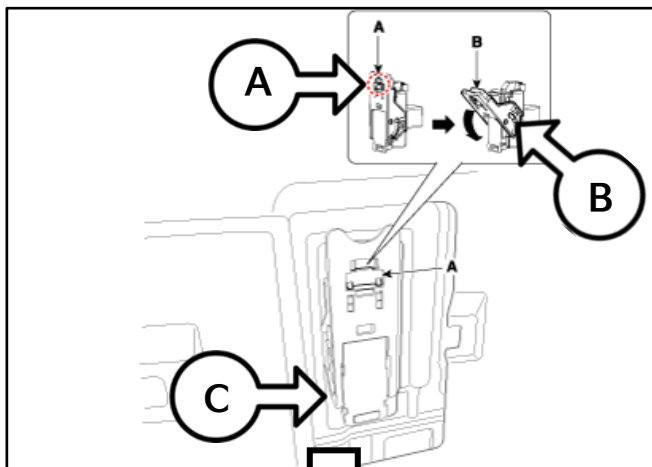
Failure to follow the High Voltage Shut-off Procedure may result in serious electrical injuries.



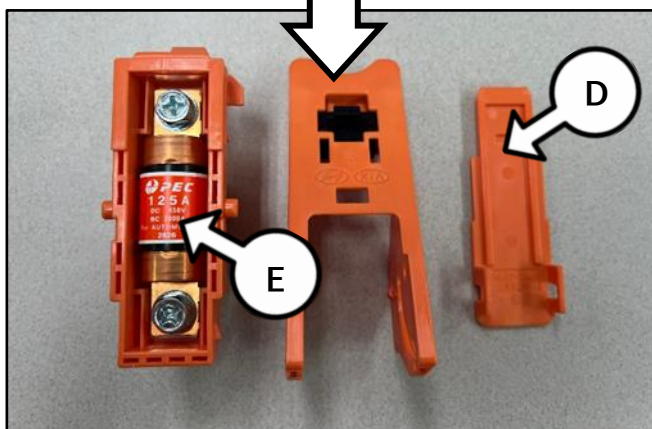
2. Open the High Voltage Battery (HVB) safety plug service cover in the rear cargo area.



3. Unlock the lever hook (A).
4. Pull down on the lever (B).
5. Remove the safety plug (C).



7. Using a flathead screwdriver, remove the safety plug cover (D) to expose the High Voltage (HV) main fuse (E).



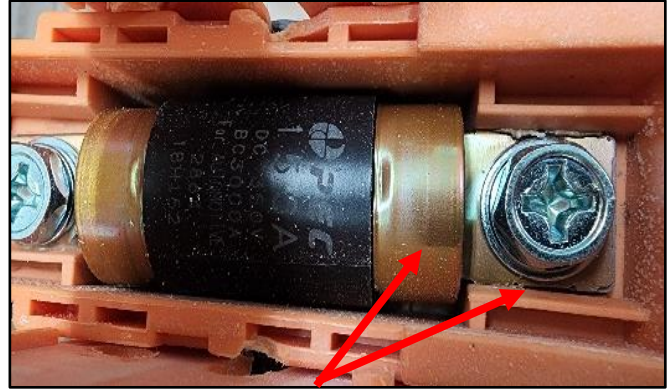
Note: OPEC 125A/150A is the Kia genuine fuse.

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6. Inspect the HV main fuse for any trace of 'thermal deformation/burnout' and if the HV main fuse has been replaced with an aftermarket (non-genuine Kia) fuse.

- Thermal deformation or burnout is present, replace Safety Plug Fuse Assembly (150A) and skip to step 8.
- A 'non-genuine Kia' HV main fuse is present, replace Safety Plug Fuse Assembly (150A) and skip to step 8.
- No thermal deformation/burnout is present and the main fuse is a genuine Kia fuse, proceed to step 7.



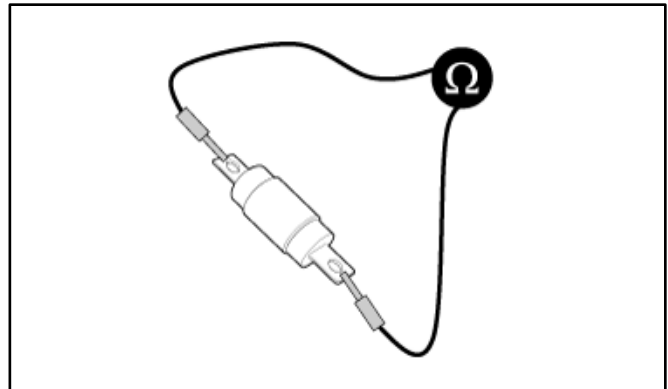
Thermal Deformation / Burnout



Non-Genuine DC Fuse

7. Using a multimeter, measure the HV main fuse resistance.

- Resistance is 1Ω or less (OK), refer to the applicable Shop Manual on KGIS for DTCs P1B77 and P1B25 to diagnose.
- Resistance is over 1Ω (NG), replace the HV Main Fuse only.



8. Reassemble safety plug and main fuse in reverse order. Verify proper operation.




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AFFECTED VEHICLE RANGE:

Model	Production Date Range
Optima Hybrid (TF HEV)	September 27, 2012 to July 22, 2015

REQUIRED PART:

Part Name	Part Number	Figure	Qty.
Safety Plug Fuse Assembly* (Black Locking Hook)	37586 4R000ASFFF		1
Safety Plug Fuse Assembly* (Green Locking Hook)	37586 4R002FFF		1
High Voltage Main Fuse	375F2 4R150FFF		1

*Safety Plug Fuse Assembly includes a 150A fuse.

WARRANTY INFORMATION:

N Code: I3A C Code: ZZ3

Claim Type	Causal P/N	Qty.	Repair Description	Labor Op Code	Op Time	Replacement P/N	Qty.
W	37586 4R000 (13MY Only) <u>or</u> 37586 4R002 (14-16MY Only)	0	Safety Plug Main Fuse Inspection + HVB Safety Plug Fuse Assy Replacement (Non-Genuine Fuse present)	222136R0	0.3 M/H	37586 4R000ASFFF <u>or</u> 37586 4R002FFF	1
			Safety Plug Main Fuse Inspection + HVB Safety Plug Fuse Assy Replacement (Genuine Fuse present w/Thermal Deformation)	222136R1	0.3 M/H	37586 4R000ASFFF <u>or</u> 37586 4R002FFF	1
			Safety Plug Main Fuse Inspection + HV Main Fuse Replacement Only (Resistance over 1Ω)	222136R2	0.3 M/H	375F2 4R150FFF	1
			Hybrid System Warning Inspection (Diagnosis Coverage Only)	222136R3	0.3 M/H	N/A	0
			HVB Safety Plug Fuse Assy Replacement w/Customer's Non-Genuine Fuse Awareness (w/o DTC Inspection)	222136R4	0.2 M/H	37586 4R000ASFFF <u>or</u> 37586 4R002FFF	1

