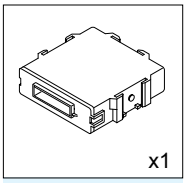
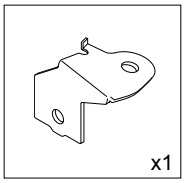
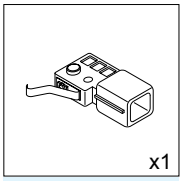
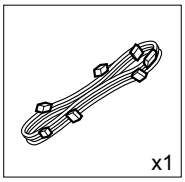
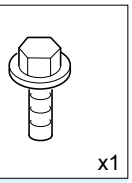
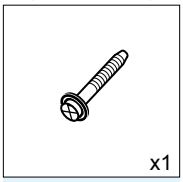
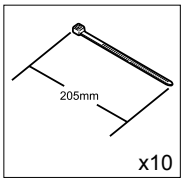
Part #: PT398-42130

Conflicts: Do not install into Non-Smart Vehicles and do not use Techstream Lite.

Kit Contents

RES ECU	RES ECU Bracket	Hood Switch	V4 Harness	M6 Bolt	Screw (for Hood SW)	Wire Tie
 x1	 x1	 x1	 x1	 x1	 x1	 x10
PT398-89100-SS		PT398-52080-HS		91651-60618	90167-T120A	

Foam Tape	Key Tag	Window Label	Engine Room Label	Owner's Guide
 x1	 English x2 Spanish x2	 English x2 Spanish x2	 English x1 Spanish x1	 x1
(E) PT398-4209E (S) PT398-4209S		(E) 08192-07810 (S) PT398-00071-SL		(E) PT398-00070-EL (S) PT398-00070-SL

Service Part #'s

Additional Items

(may be required)

Item#	Description

Recommended Sequence of Application

Item#	Description

Recommended Tools

Personal & Vehicle Protection	Description
Safety Glasses	
Safety Gloves	(Optional)
Special Tools	
Techstream	Use latest version on TIS (Do not use Techstream Lite)
1/4" Drive Torque Screwdriver (Req'd for Hood Switch)	Included in the TPMS Tool Kit# 00002-TTPWS Toyota SST# 00002-TTPWS-03, #0 Phillips Hood Switch: 3.1 in•lbf (0.35 N•m)
Installation Tools	
Pick Tool	
Screwdriver	Flat Blade Jeweler's
Nylon Panel Removal Tool	e.g. Panel Pry Tool #1 Toyota SST# 00002-06001-01
Side Cutters	
Torque Wrench	Battery: 48 in•lbf (5.4 N•m) Hood Latch: 71 in•lbf (8.0 N•m)
Pliers	Needle Nose
Tape	Clear, Electrical
Wrench	10mm
Socket	10mm, Extension
Special Chemicals	
Cleaner	VDC Approved Cleaner
Glass Cleaner	Household Glass Cleaner

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Legend

Do not proceed until process has been completed.

Follow steps carefully to avoid damaging the Vehicle or Accessory

Use caution to avoid injury.

Used in Figures to call attention to specific tools recommended for the process.

Highlights a change in installation with respect to previous issue.

Indicates that torque is related to safety.

Video available; click to play.

Wire Tie location and number.

Accessory Installation Practice (read before installation)

Care must be taken when installing this accessory to ensure damage does not occur to the vehicle. The installation of this accessory should follow approved guidelines to ensure a quality installation.

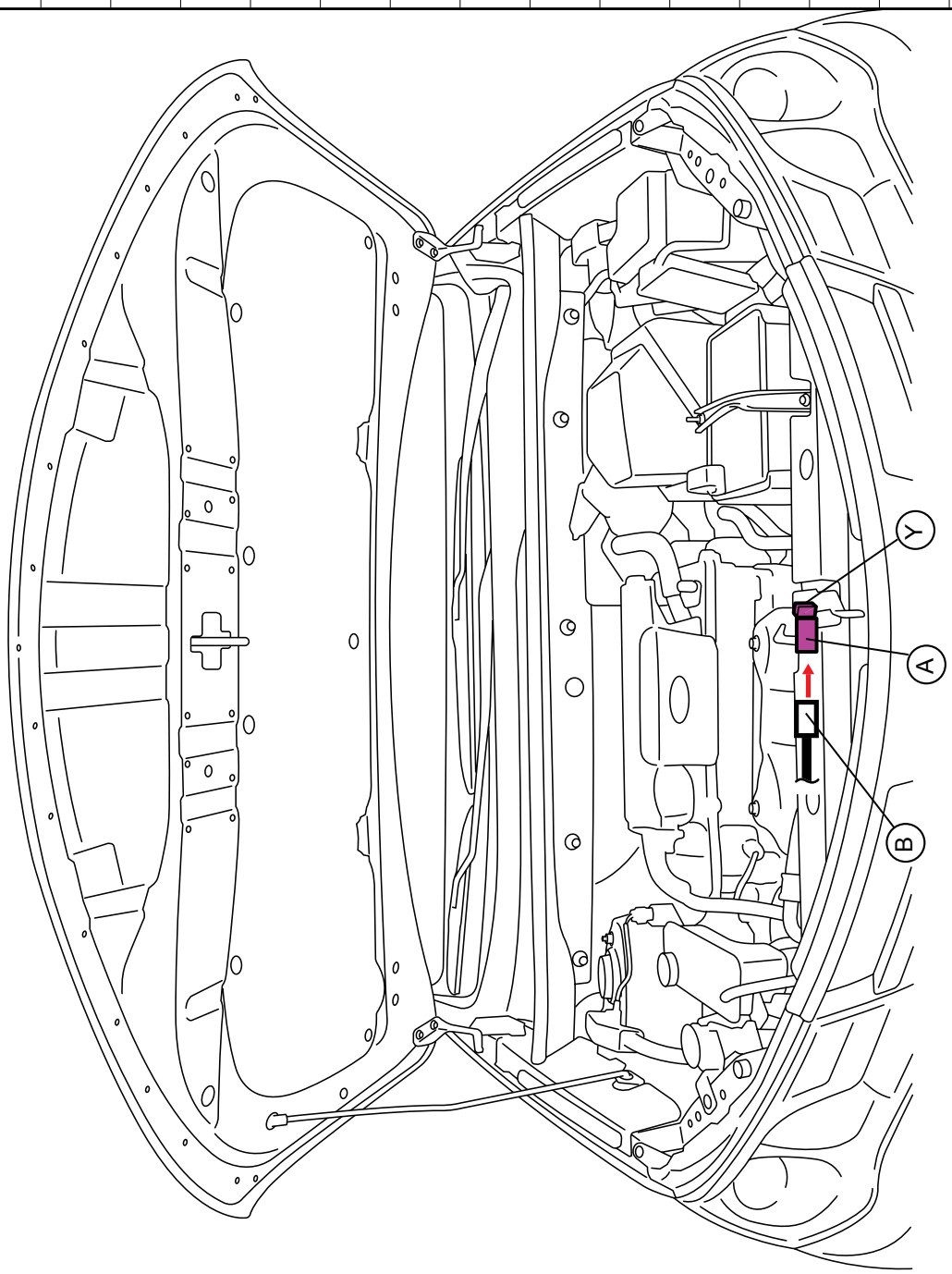
These guidelines can be found in the “Accessory Installation Practices” document.

This document covers such items as:

- Vehicle Protection (use of covers and blankets, cleaning chemicals, etc.)
- Safety (eye protection, checking torque procedure, etc.)
- Vehicle Disassembly/Reassembly (panel removal, part storage, etc.)
- Electrical Component Disassembly/Reassembly (battery disconnection, connector removal, etc.)

Please see your TOYOTA dealer for a copy of this document.

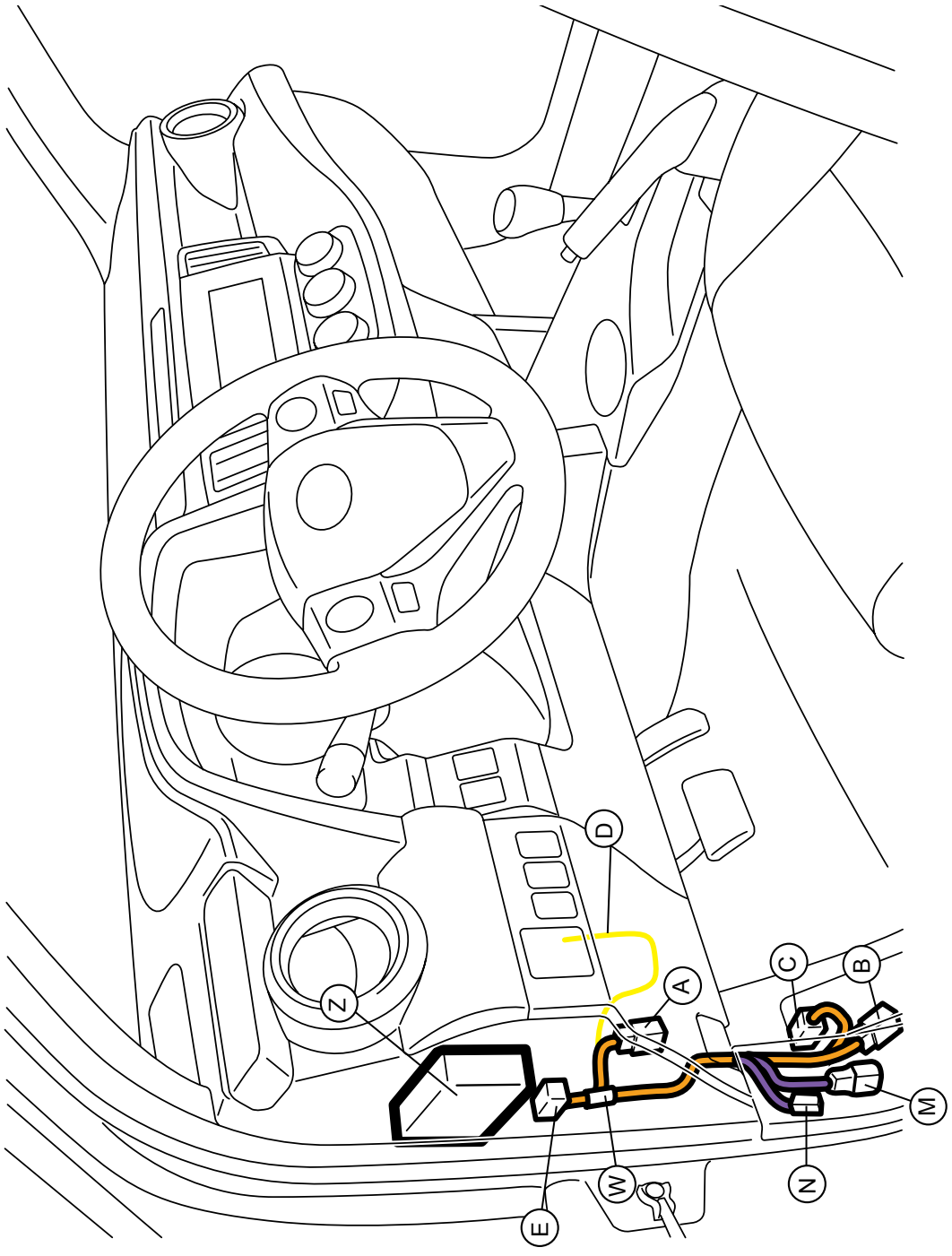
A	2P Black
B	Vehicle's 2P Black Pre-Connector
Y	Hood Switch



RAV4 w/Smart Key RES
Engine Compartment

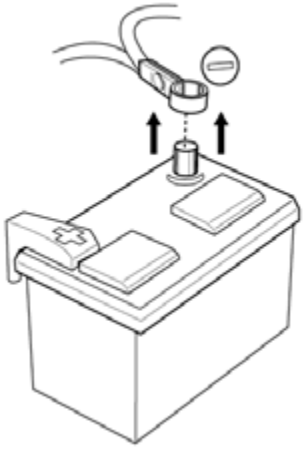
TVIP	Vehicle	Description
A	G69	5P White
B	JG2	12P White
C	JG2	12P White
D	3C	Yellow Wire *(Female Terminal)*
E	—	24P White *(for RES ECU)*
M	—	1P White *(for Registration)*
N	—	1P White *(for Registration)*
W	—	White Tape
Z	—	RES ECU

RAV4 w/Smart Key RES
Wire Routing Overview



10mm Wrench

Fig. 1-1



1. Hood Switch Installation.

a. Place the Vehicle in Park with the Parking Brake set.

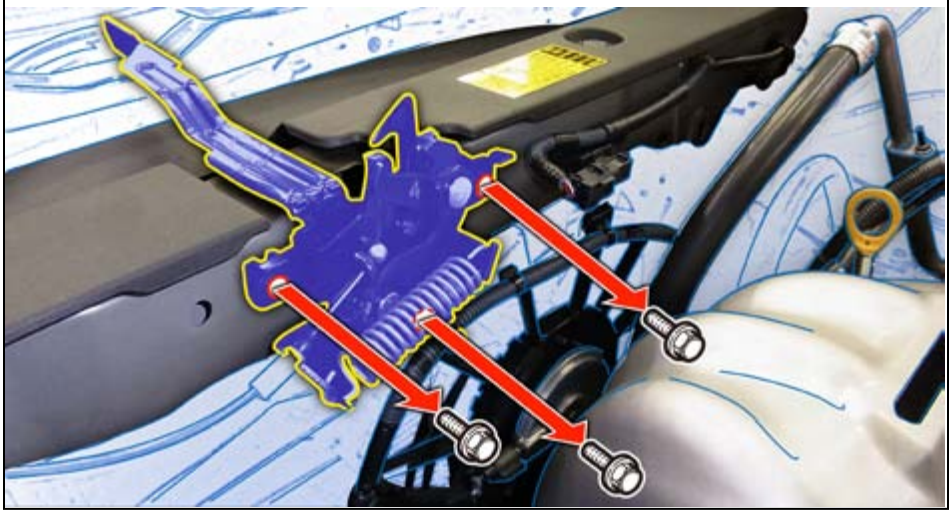
b. Disconnect the Negative Battery Terminal.

- Note the Battery Cable Position as it will be re-installed in the same position.

CAUTION: Do not touch the Positive Terminal.

10mm Socket

Fig. 1-2

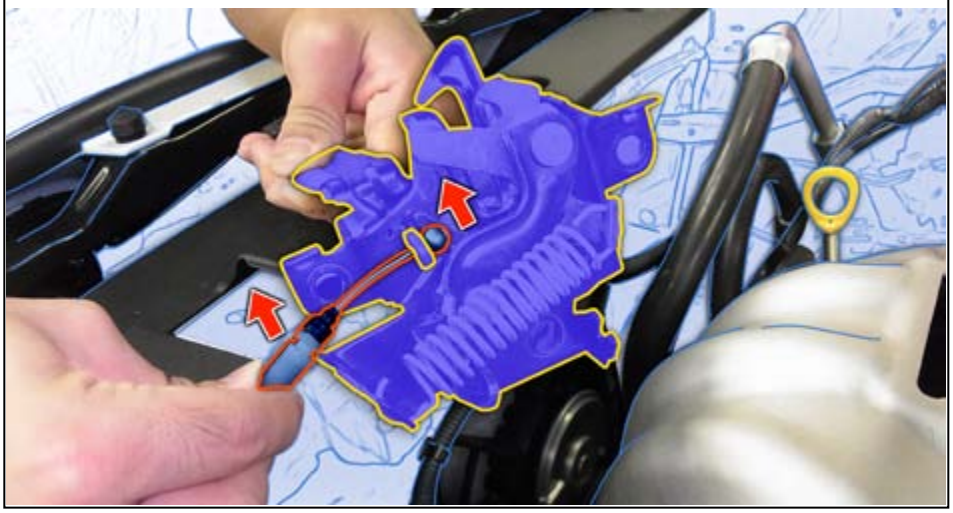


c. Dislodge the Hood Lock Assembly.

- Remove 3 Bolts.

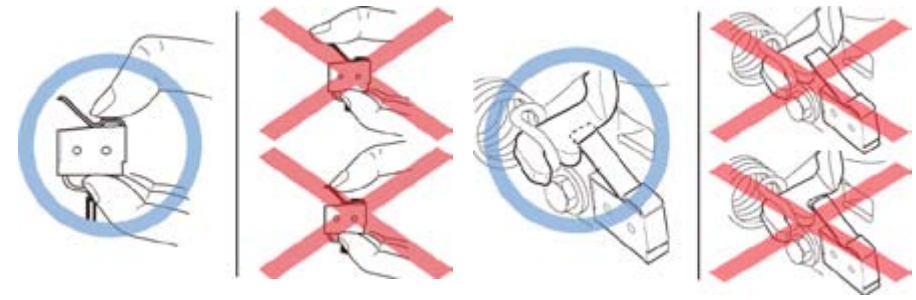
Needle Nose Pliers

Fig. 1-3



d. Remove the Hood Lock Cable from the Hood Lock Assemby.

Fig. 1-4

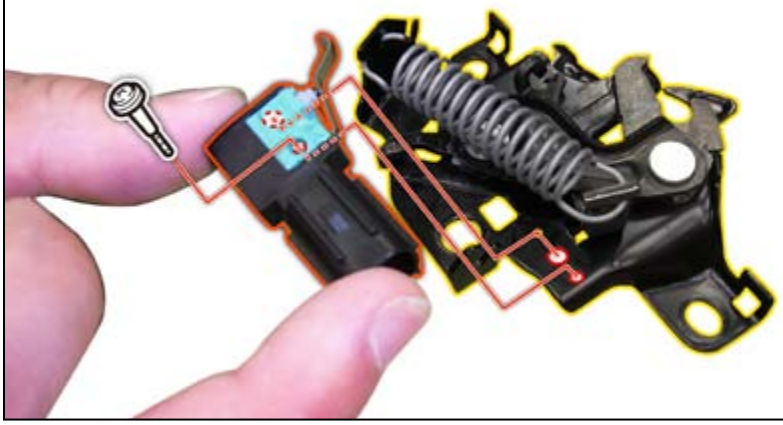


Make sure to hold the Hood Switch by its sides.

Make sure the Hood Switch Lever is positioned properly.

If the Hood Switch is broken, RES will not function.

Phillips Jeweler's Screwdriver, Torque Screwdriver Fig. 1-5

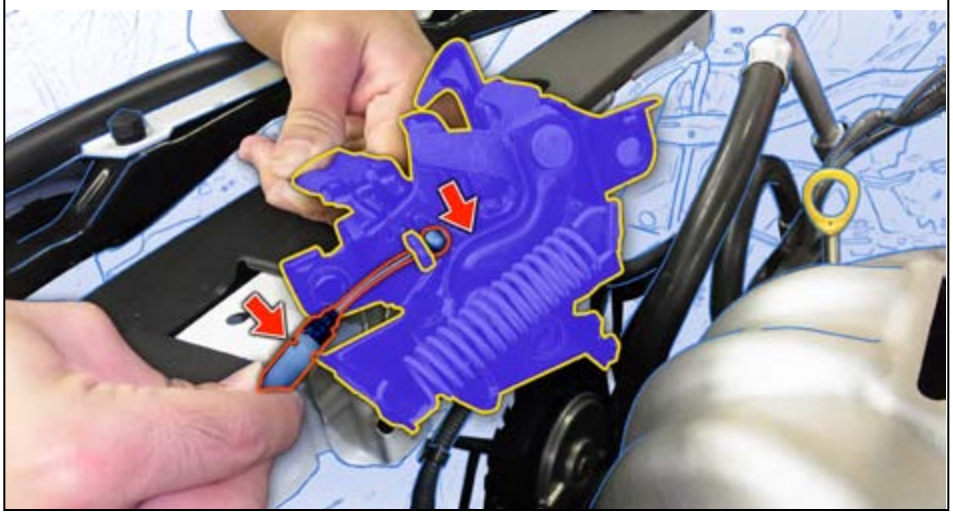


e. Install the Hood Switch with the Switch Lever underneath the Hood Lock Trigger Lever.

NOTE: Torque the Screw to 3.1 in•lbf (0.25~0.35 N•m).

NOTE: Do not re-use the Screw once it is already installed. The effect of the adhesive becomes weak if used again.

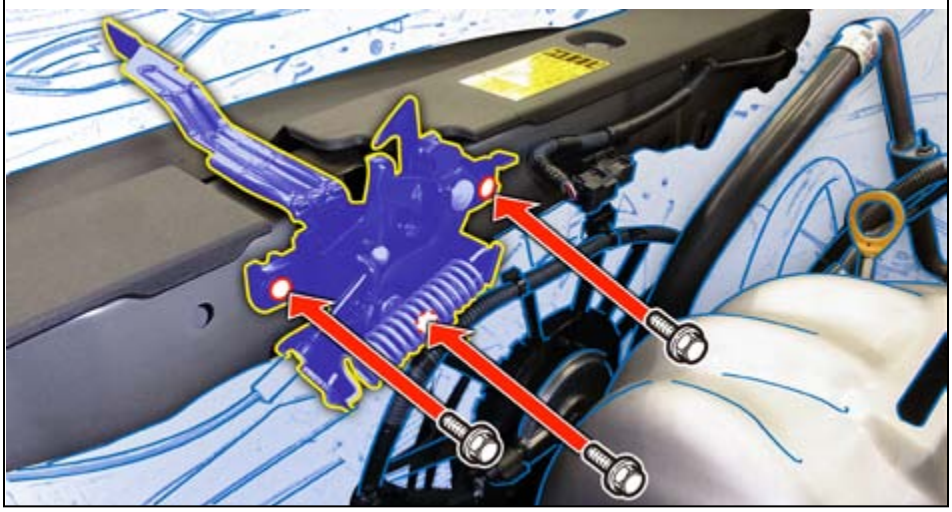
Needle Nose Pliers Fig. 1-6



f. Reinstall the Hood Lock Cable to the Hood Lock Assembly.

Torque Wrench

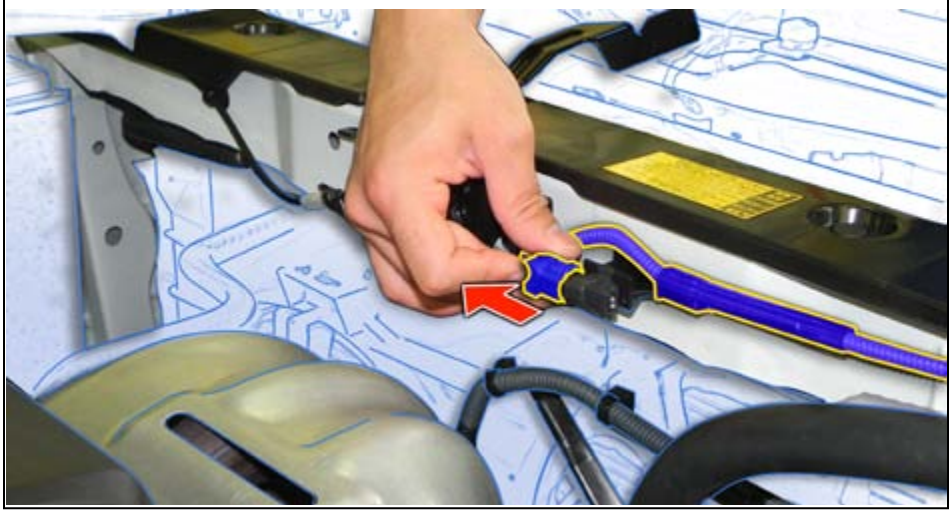
Fig. 1-7



g. Reinstall the Hood Lock Assembly.

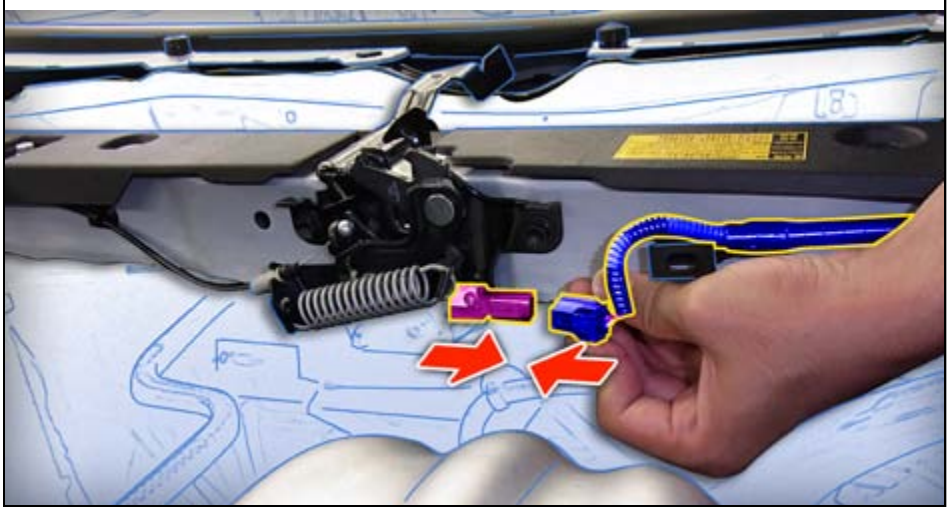
NOTE: Torque the Bolts to 71 in•lbf (8.0 N•m).

Fig. 1-8



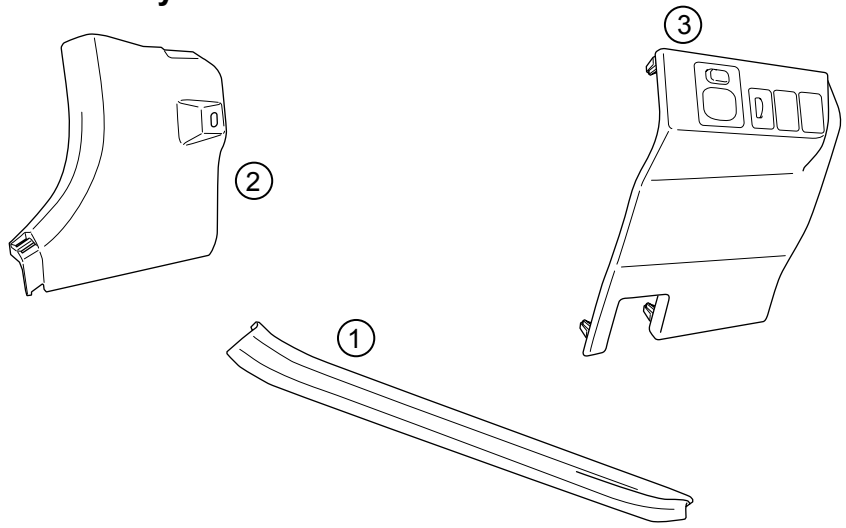
h. Disconnect the Vehicle's Black 2P Pre-Connector.

Fig. 1-9



i. Connect the Vehicle's Black 2P Pre-Connector to the Hood Switch Connector.

Disassembly Overview



1	DS Step Cover
2	DS Cowl Cover
3	DS Lower Dash Cover

Disconnect all Corresponding Connectors.

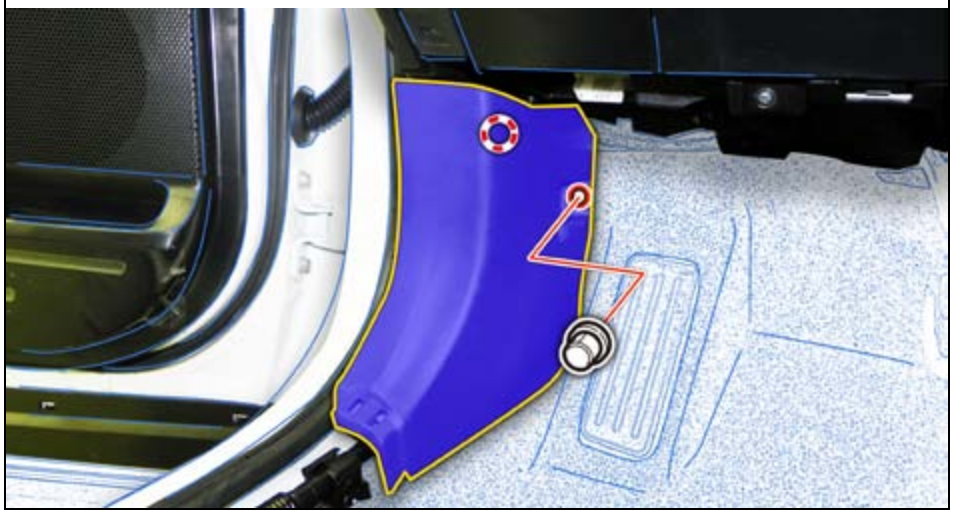
Nylon Panel Removal Tool Fig. 2-1



2. Vehicle Disassembly.

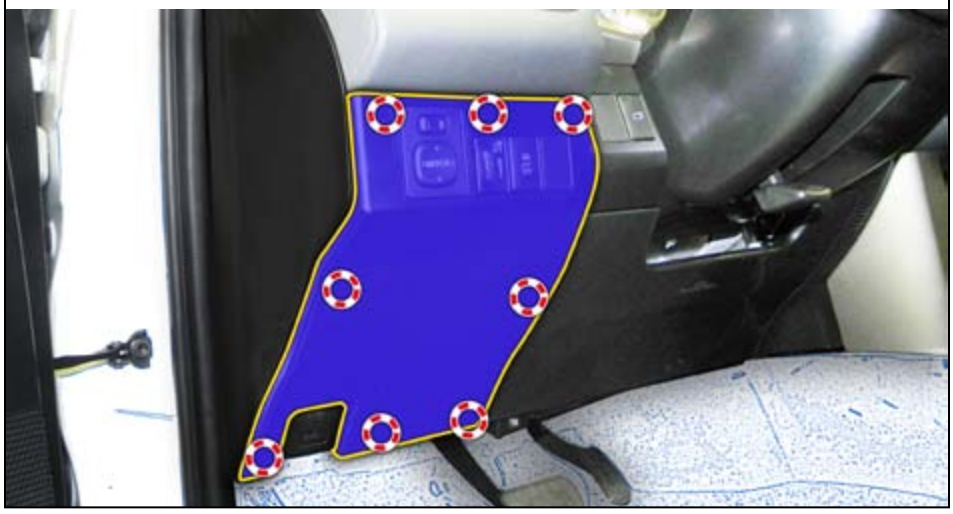
a. Remove the Driver's Side Step Cover.

Nylon Panel Removal Tool Fig. 2-2



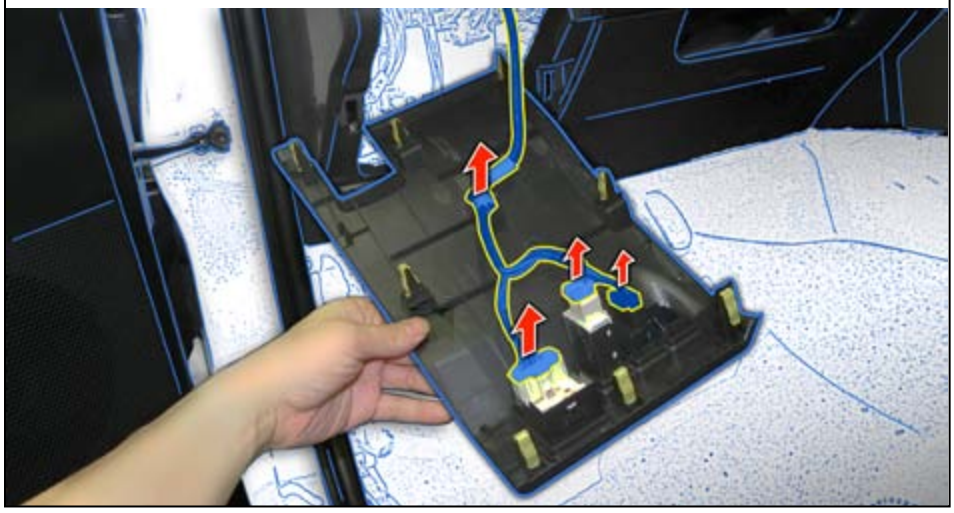
b. Remove the Driver's Side Cowl Cover.
   - Remove 1 Nut.

Nylon Panel Removal Tool Fig. 2-3



c. Dislodge the Driver's Side Lower Dash Cover.

Nylon Panel Removal Tool Fig. 2-4



d. Disconnect the Vehicle Connectors from the Lower Dash Cover.
   - Dislodge Vehicle Harness Clip.

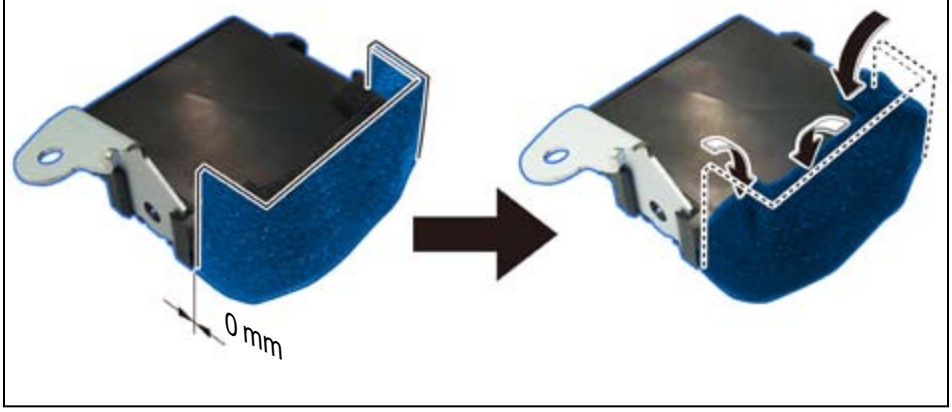
Fig. 3-1



3. RES ECU Preparation and Installation.

a. Attach the RES ECU Bracket to the RES ECU.

Fig. 3-2



b. Attach the Foam Tape to the RES ECU.

Fig. 3-3



c. Connect the V4 24P White Connector to the RES ECU.

10mm Socket Fig. 3-4

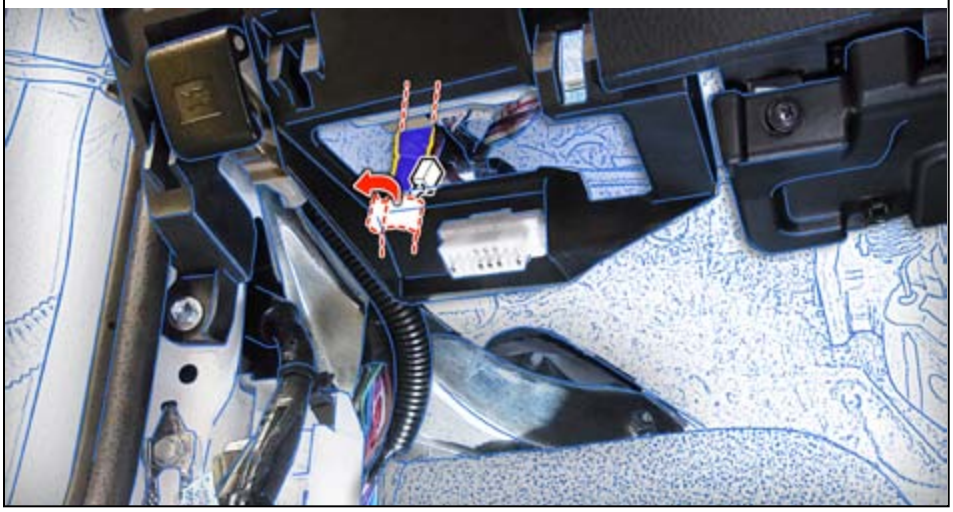


d. Install the RES ECU using the supplied Bolt.

NOTE: Make sure the Guide Pin is seated correctly and verify that the Bolt is tightened securely.

e. Route the V4 Harness toward the Driver's Side Cowl Area.

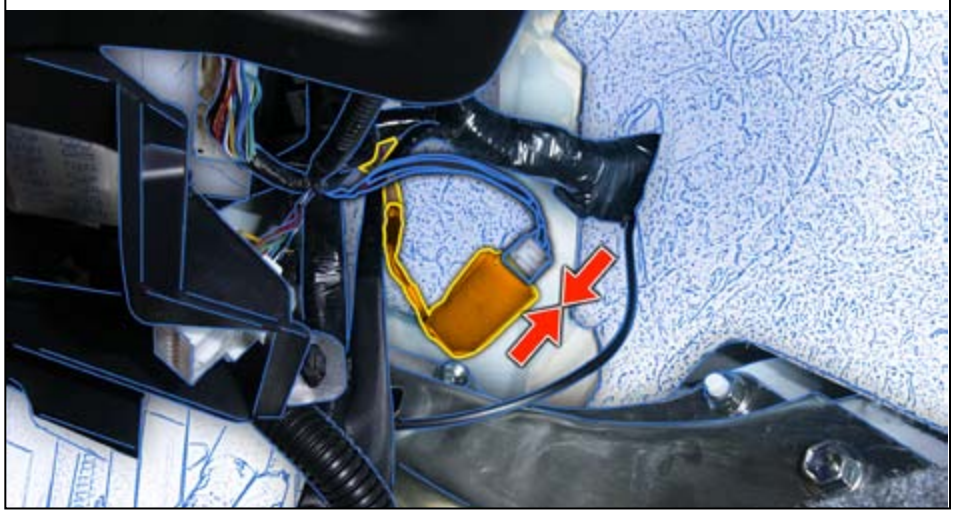
Fig. 4-1



4. V4 Harness Installation.

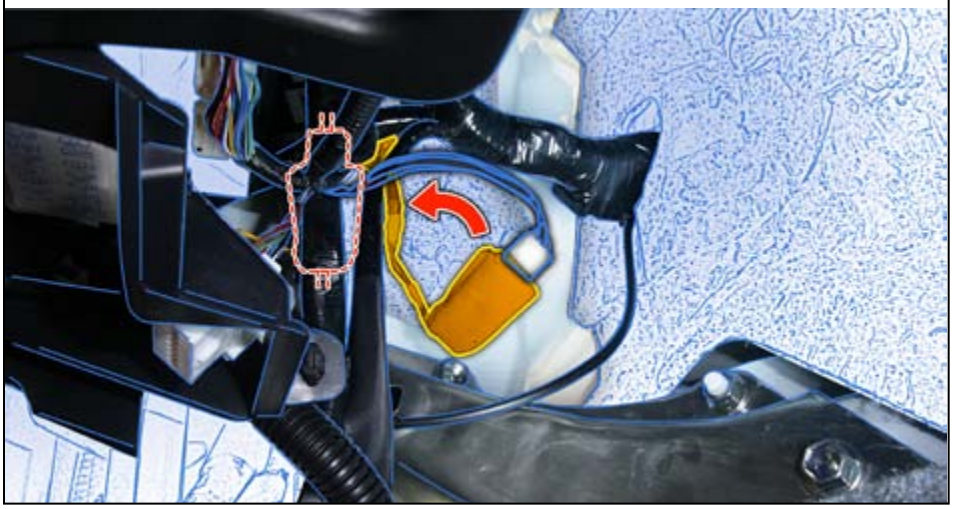
a. Locate the Vehicle's 5P White Pre-Connector and remove the Tape securing it.

Fig. 4-2



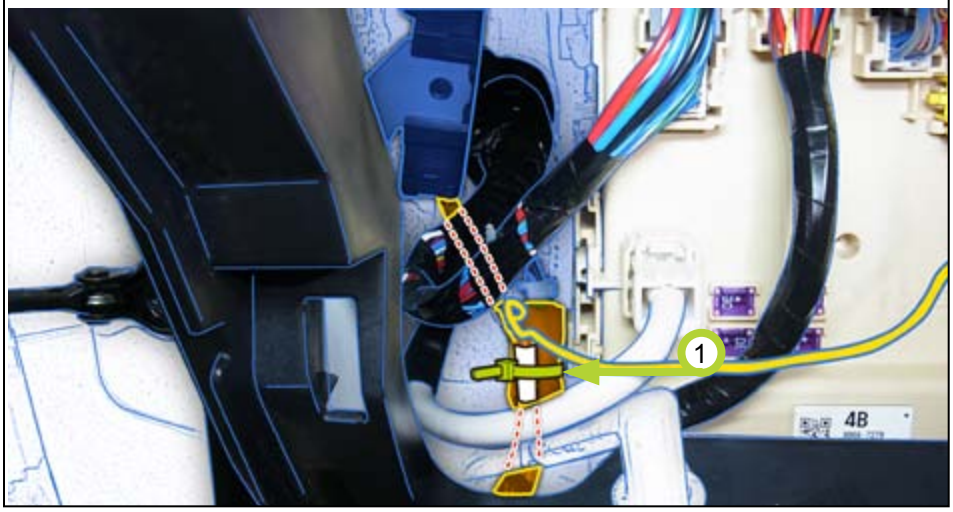
b. Connect the V4 5P White Connector to the Vehicle's 5P White Pre-Connector.

Fig. 4-3



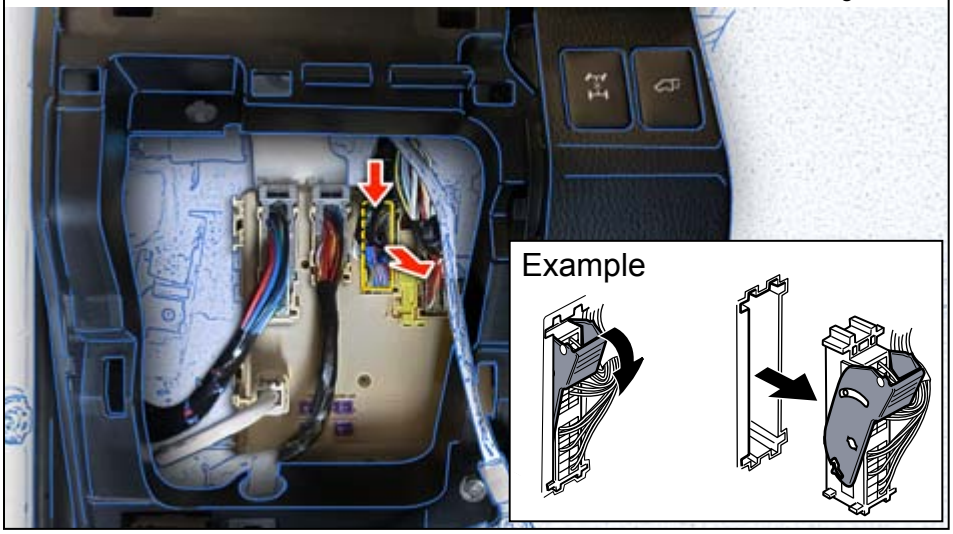
c. Route the 5P Connectors toward the Lower Dash Cover area.

Side Cutters Fig. 4-4



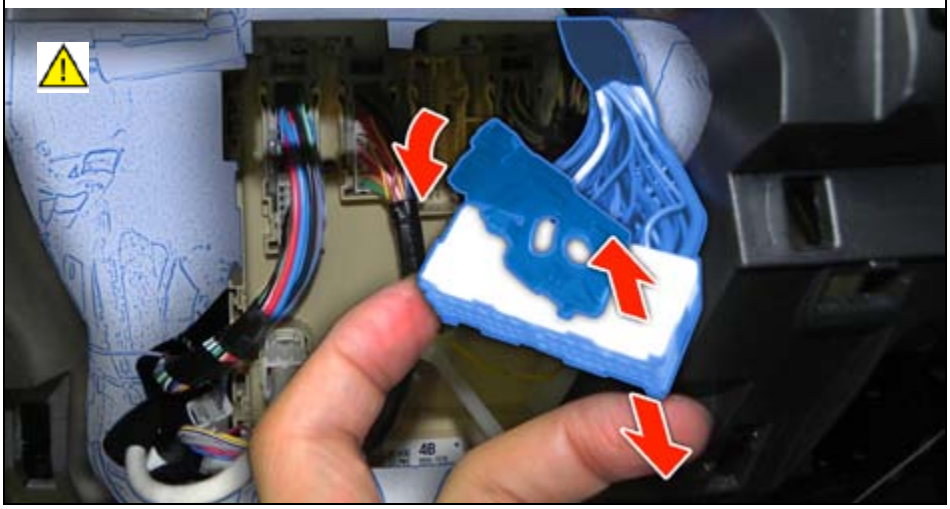
d. Secure the V4 Harness's White Tape Marker and the 5P Connectors to the Vehicle Harness using 1 Wire Tie.

Fig. 4-5



e. Disconnect the Vehicle's 48P White Connector from the Vehicle's J/B.
   - Release the Vehicle Connector's Black Lever.

Flat blade Jeweler's Screwdriver Fig. 4-6

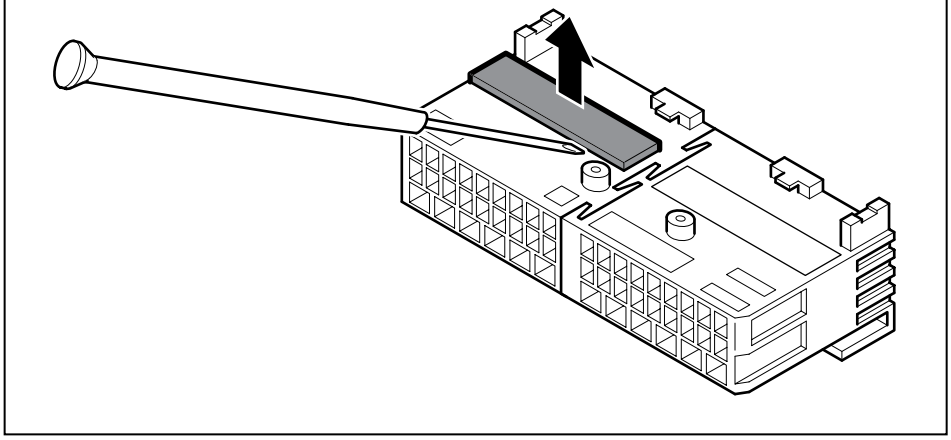


f. Remove the 48P White Vehicle Connector's Lever.
   - Release the lock on both sides of 48P Connector.

CAUTION: Do not force the 48P Connector's Lever.

Flat blade Jeweler's Screwdriver, Pick Tool

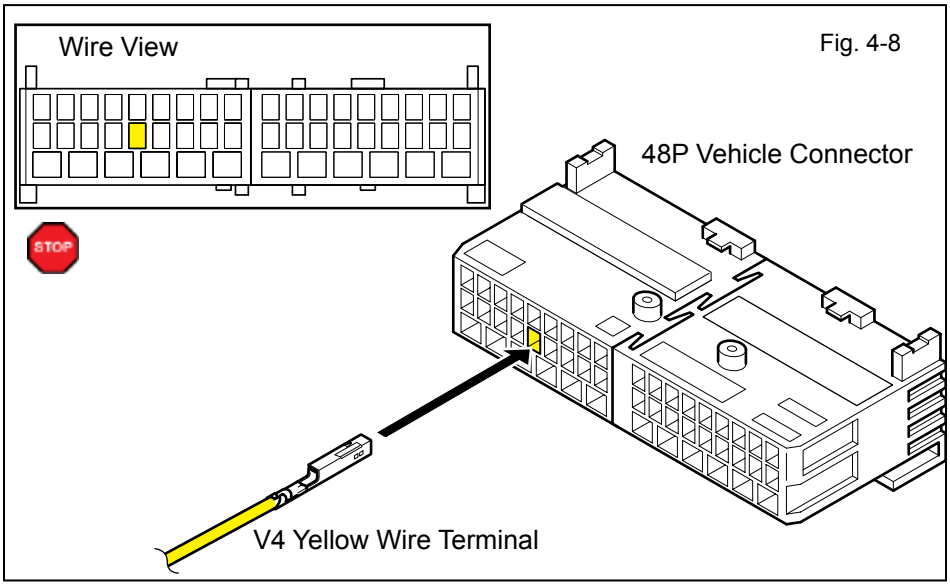
Fig. 4-7



g. Lift the Terminal Retainer Clip of the 48P Connector.

CAUTION: Do not pull out the Retainer Clip.

Fig. 4-8

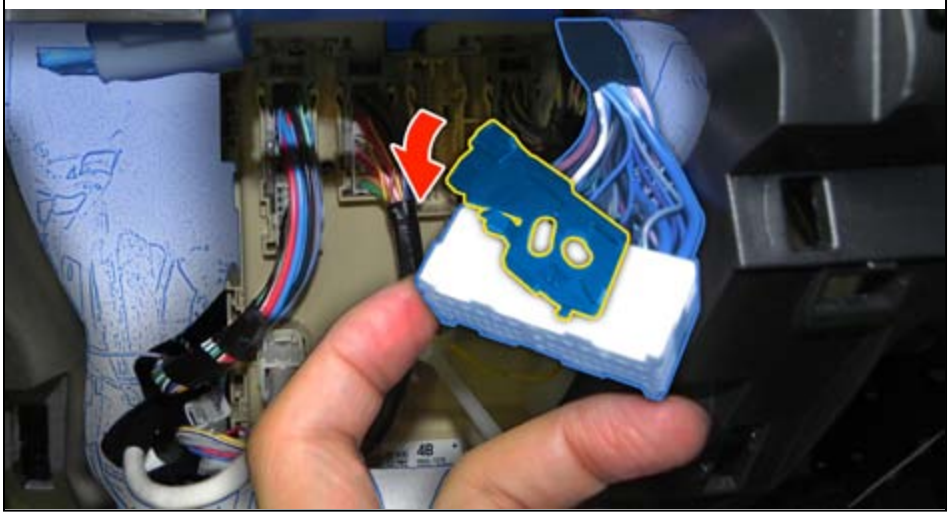


h. Insert the V4 Yellow Wire Terminal into the indicated location on the 48P White Vehicle Connector.

i. Close the 48P Connector's Terminal Retainer Clip.

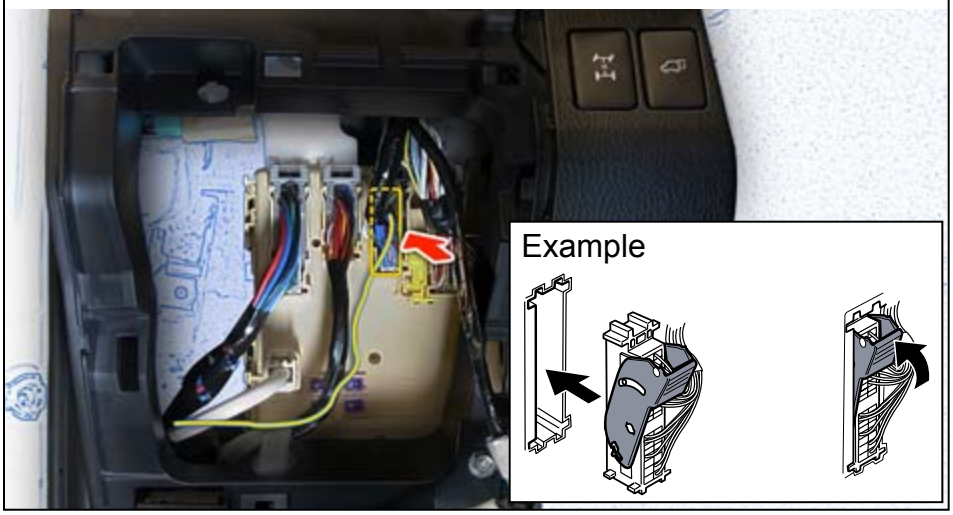
VERIFY: That the Terminal Pin is properly inserted and does not come out.

Fig. 4-9



j. Re-attach the 48P Vehicle Connector's Black Lever.

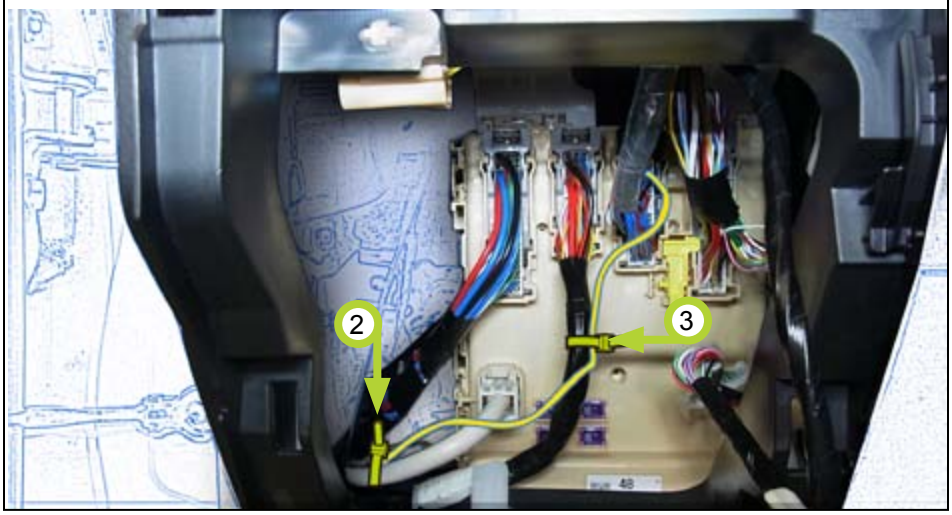
Fig. 4-10



k. Reconnect the Vehicle's 48P White Connector to the Vehicle's J/B.

Side Cutters

Fig. 4-11



l. Secure the V4 Yellow Wire to the Vehicle Harness using 2 Wire Ties.

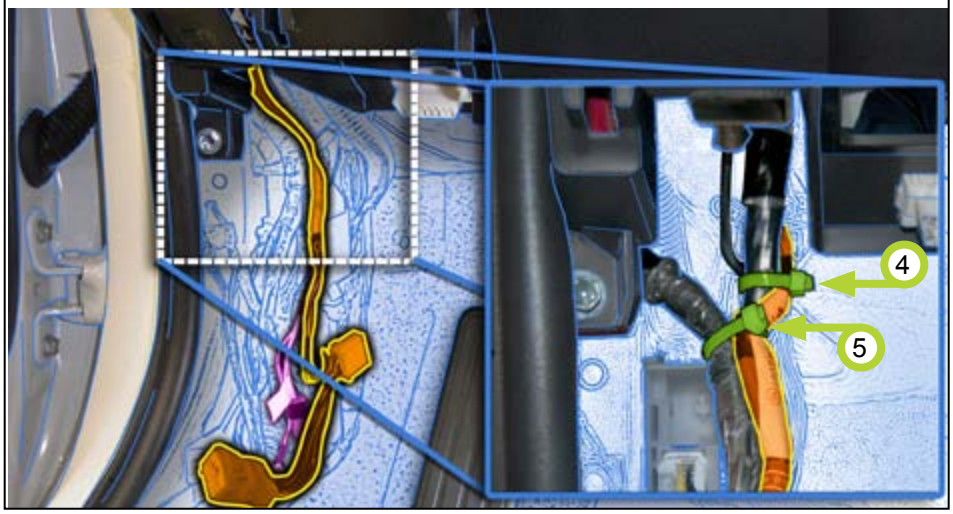
Fig. 4-12



m. Route the V4 Harness toward the Driver's Side Cowl Area.

Side Cutters

Fig. 4-13

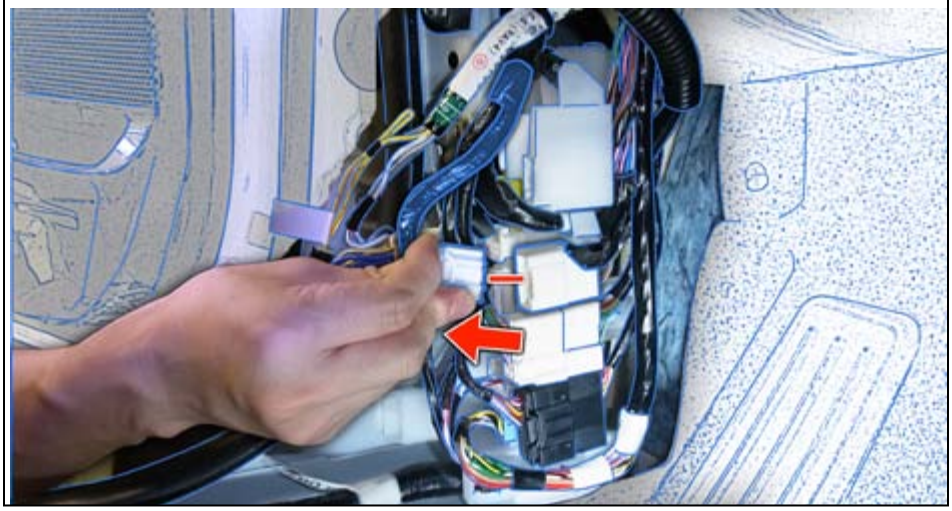


n. Secure the V4 Harness to the Vehicle Harness using 1 Wire Tie.

NOTE: Make sure not to secure to the Hood Latch Cable.

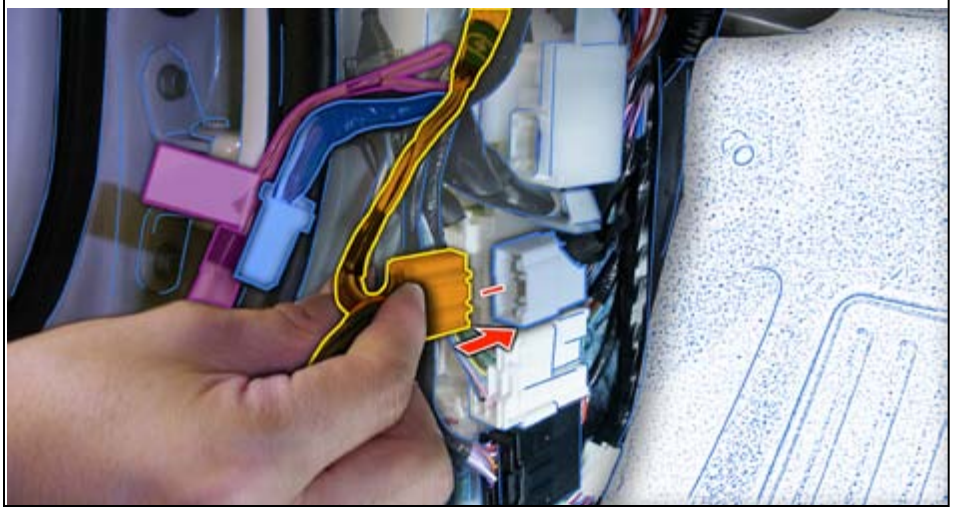
o. Secure the V4 Harness to the Vehicle Harness using 1 Wire Tie.

Fig. 4-14



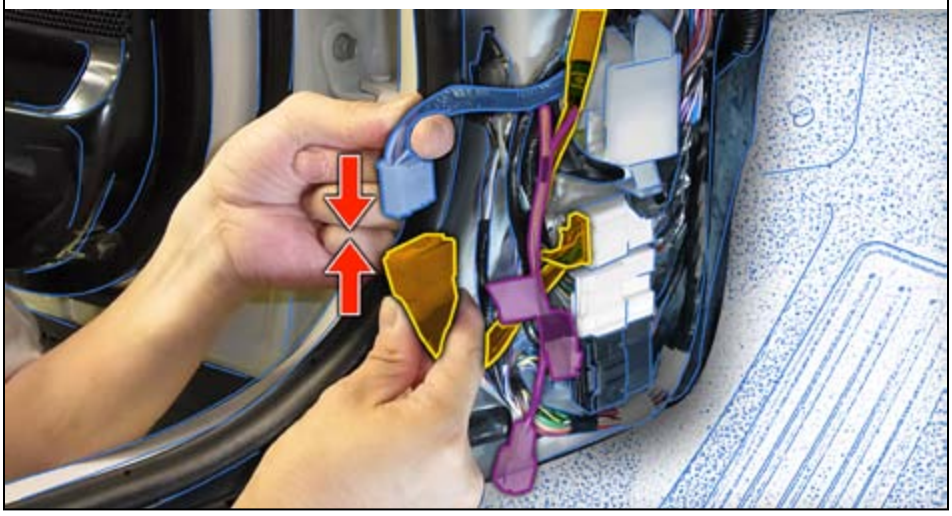
p. Disconnect the Vehicle's 12P White Connector from the Connector Block in the DS Cowl Area.

Fig. 4-15



q. Connect the V4 12P White Connector to the Vehicle's Connector Block.

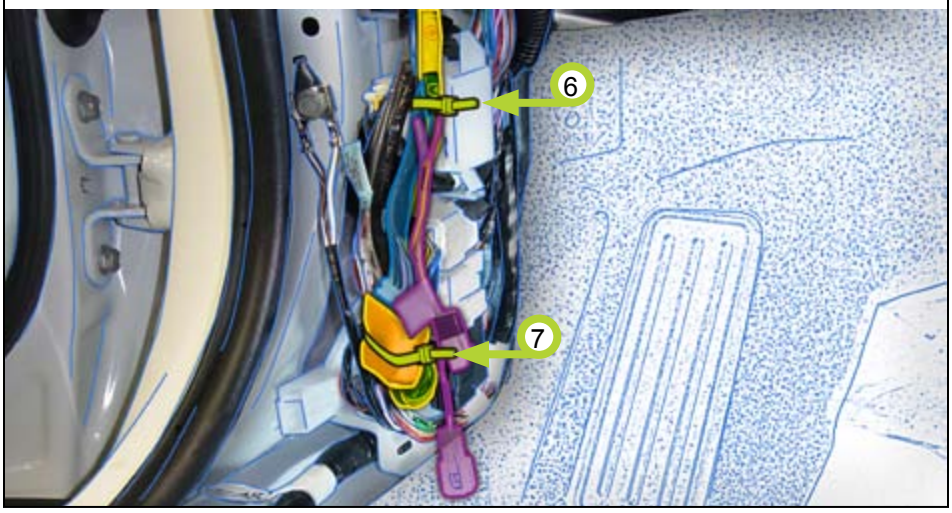
Fig. 4-16



r. Connect the V4 12P White Connector to the Vehicle's 12P White Connector.

Side Cutters

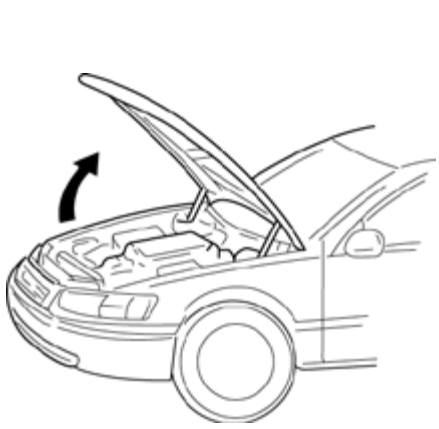
Fig. 4-17



s. Secure the V4 Harness to the Vehicle Harness using 1 Wire Tie.

t. Secure the 12P Connectors to the Vehicle Harness using 1 Wire Tie.

Fig. 5-1





5. Registration.

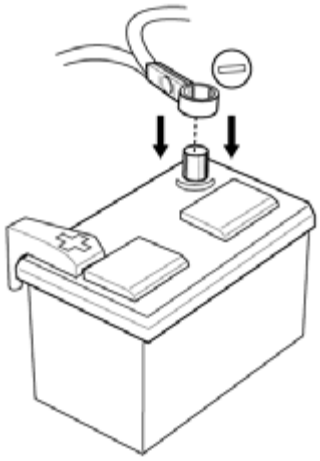
a. Open the Hood.

b. Verify if the 30 Amp Fuse is installed to D/C Cut.

- If not, install now.

10mm Socket

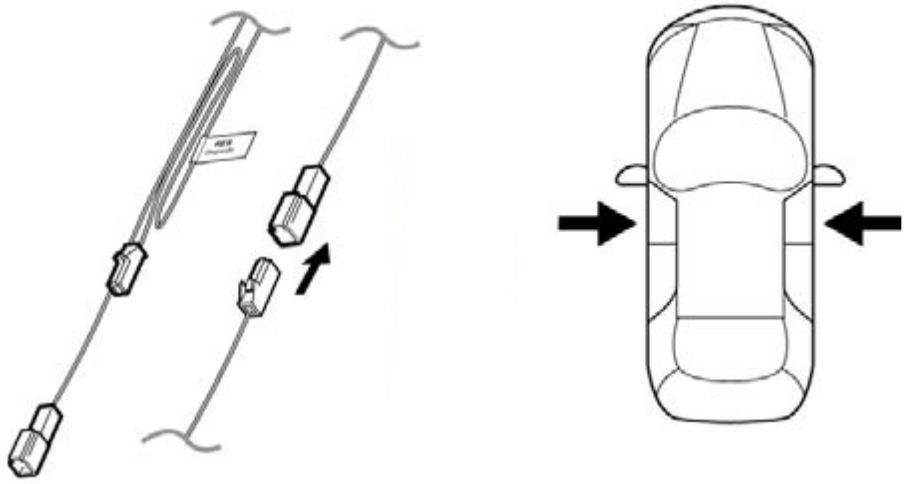
Fig. 5-2



c. Temporarily reconnect the Negative Battery Cable.

CAUTION: Do not touch the Positive Terminal.

Fig. 5-3

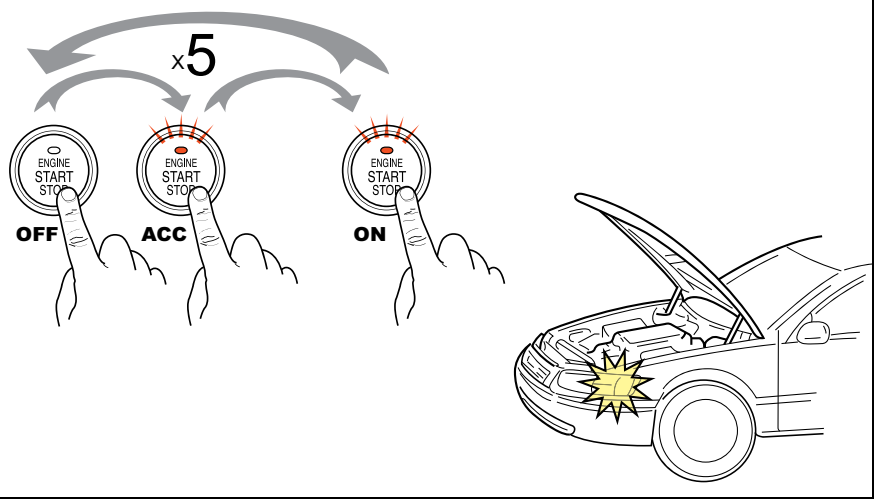


d. Locate the 1P RES Diagnostic Connectors in the Driver's Side Cowl Area and connect them.

NOTE: Once connected you will have 10 minutes to complete this section, steps e–ac.

e. Close all doors.

Fig. 5-4



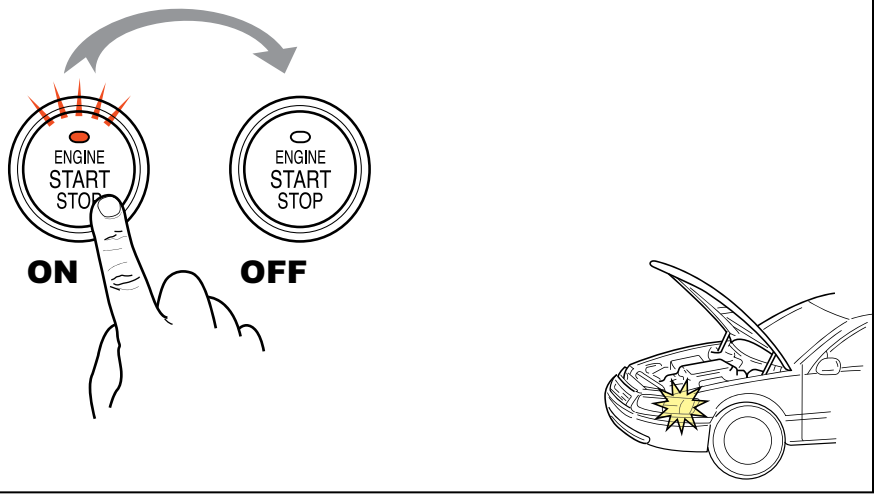
f. Place the Vehicle in Park (P) position.

g. Cycle the "Engine Start Stop" Button from OFF to ON 5 times.

NOTE: One cycle consists of: OFF → Accessory → ON. This is equivalent to pressing the "Engine Start Stop" Button 14 times.

LOOK: For the Hazard Lights to Flash Once.

Fig. 5-5



h. Start the Engine.

i. After 10 seconds stop the Engine.

LOOK: For the Hazard Lights to Flash Once.

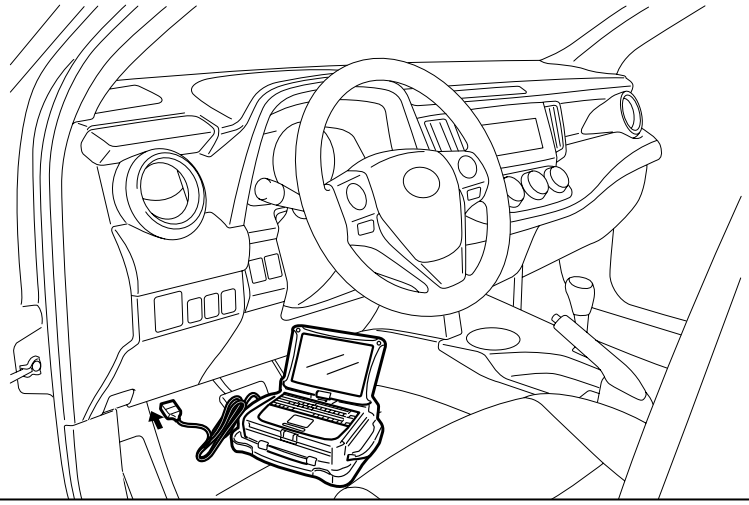
IF THIS PROCEDURE FAILED

The Hazard Lights flash Three Times.

- Disconnect the Vehicle's 1P RES Diagnostic Connectors.
- Start again from step d.

Techstream

Fig. 5-6

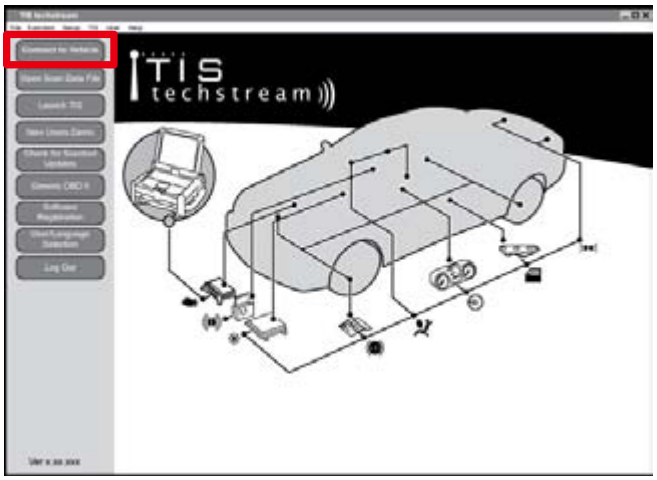


CAUTION: Techstream Lite will not work for this section, use the Techstream Notebook ONLY.

j. Connect the Techstream Notebook to the Vehicle's Diagnostic Port.

k. With the Smart Key in your possession, press the "Engine Start Stop" Button twice to select the Ignition "ON" position.

Fig. 5-7

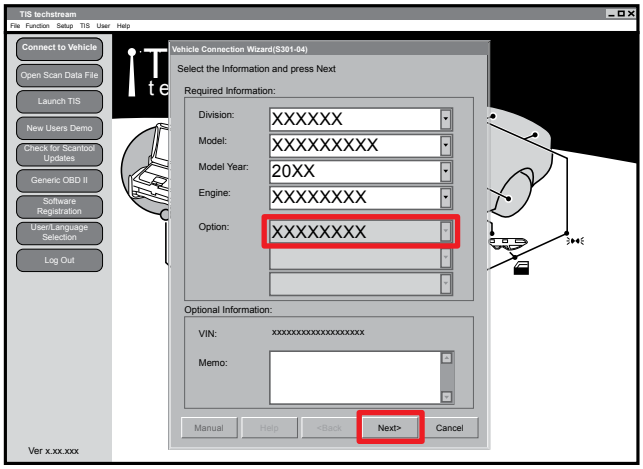


l. Start the TIS Techstream Application by clicking on the shortcut located on the Desktop.

m. Click "Connect to Vehicle".

NOTE: Remember to all keep doors closed during techstream ECU registration (until step aa.)

Fig. 5-8

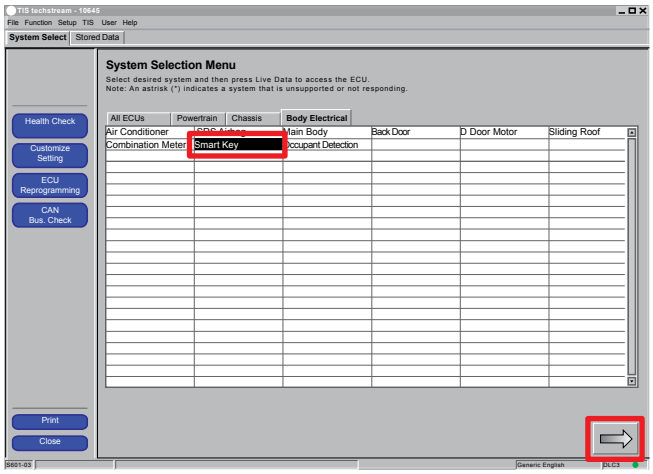


n. Confirm that the information displayed on the Vehicle Connection Wizard is correct for the vehicle. If not verify that the Techstream is properly connected.

o. Select w/Smart Key.

p. Click “Next>.”

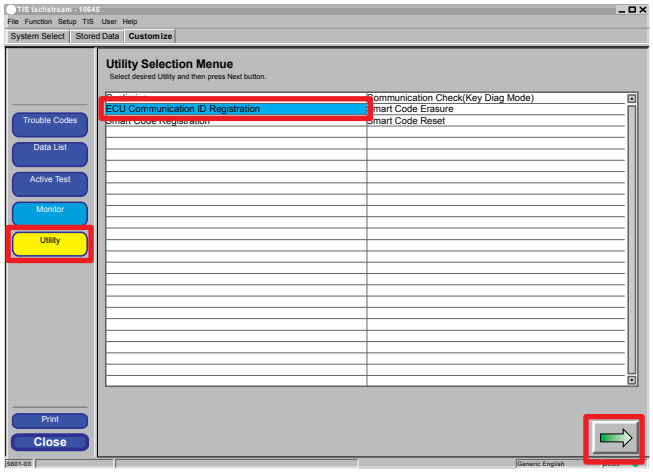
Fig. 5-9



q. Select “Smart Key.”

r. Click  .

Fig. 5-10

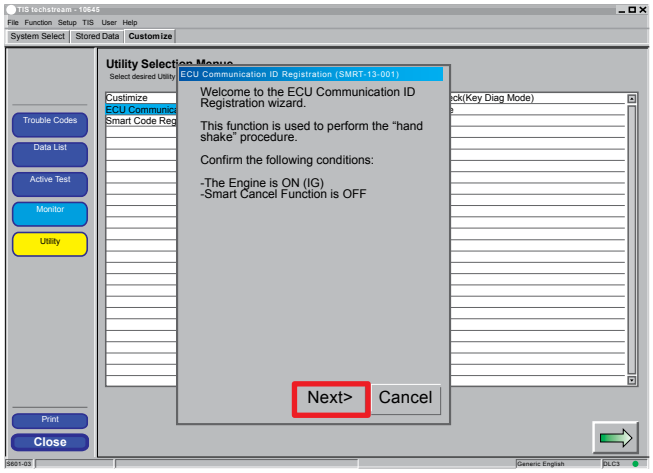


s. Click on “Utility”.

t. Select “ECU Communication ID Registration”.

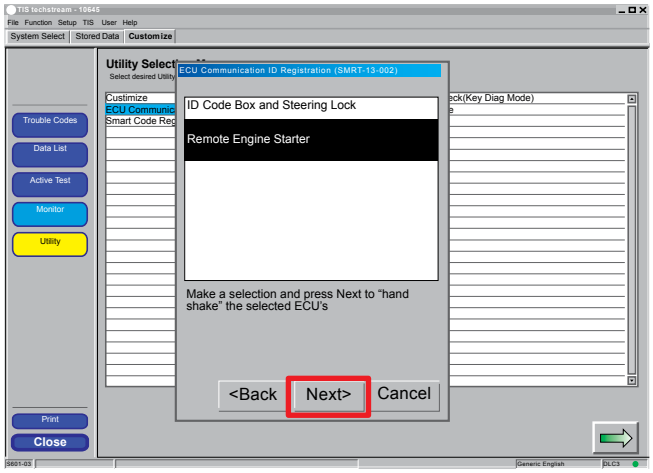
u. Click  .

Fig. 5-11



v. Click "Next>".

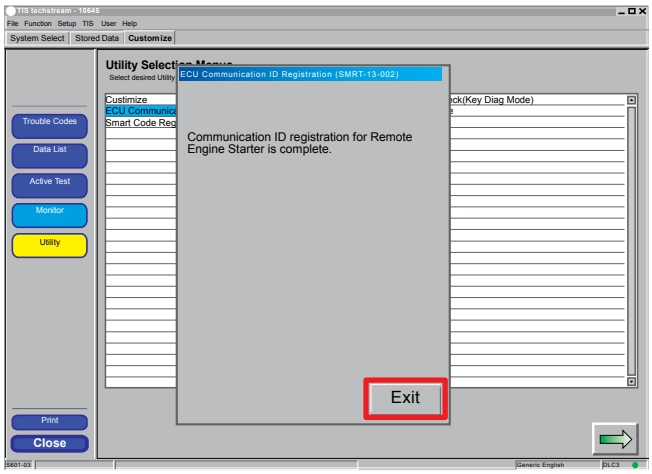
Fig. 5-12



w. Select "Remote Engine Starter".

x. Click "Next>".

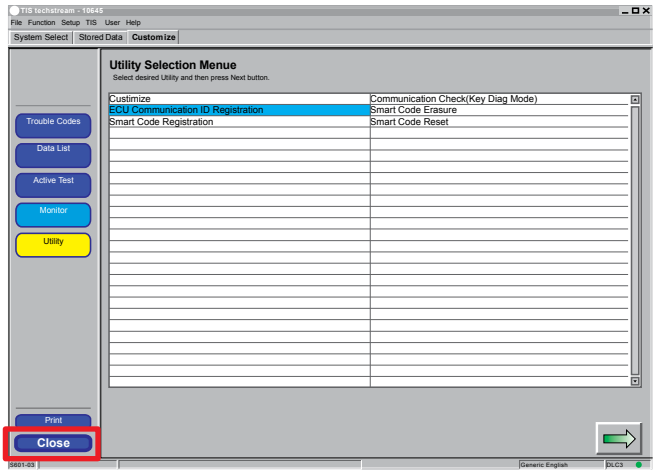
Fig. 5-13



CONFIRM: That the ECU Communication ID was completed successfully.

y. Click "Exit".

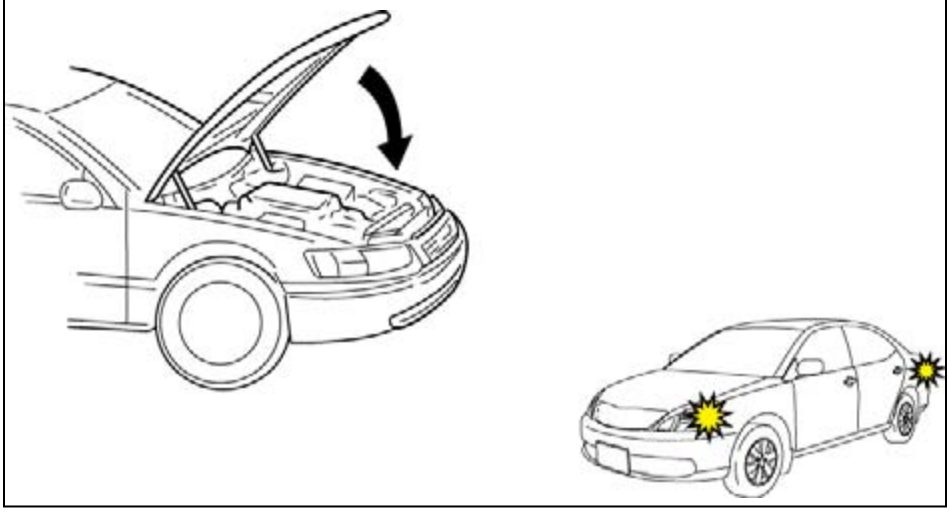
Fig. 5-14



z. Click Close.

NOTE: Leave vehicle in IG-ON mode with engine stopped and transmission in Park position when exiting vehicle for steps aa-ac.

Fig. 5-15



aa. Exit the vehicle.

ab. Close the Hood.

ac. Look for the Hazards to flash Twice.

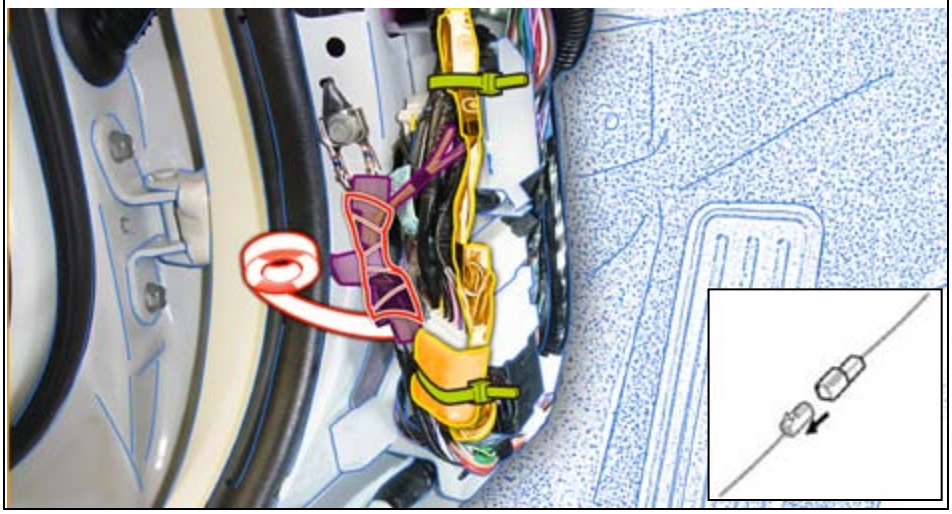
IF THIS PROCEDURE FAILED

The Hazard Lights flash Three Times.

- Disconnect the V4 vehicle's 1P RES Diagnostic Connectors.
- Start again from step d.

Electrical Tape

Fig. 5-16



ad. After a successful registration, disconnect the 1P RES Diagnostic Connectors.

ae. Secure the 1P RES Diagnostic Connectors to the Vehicle Harness using Electrical Tape.

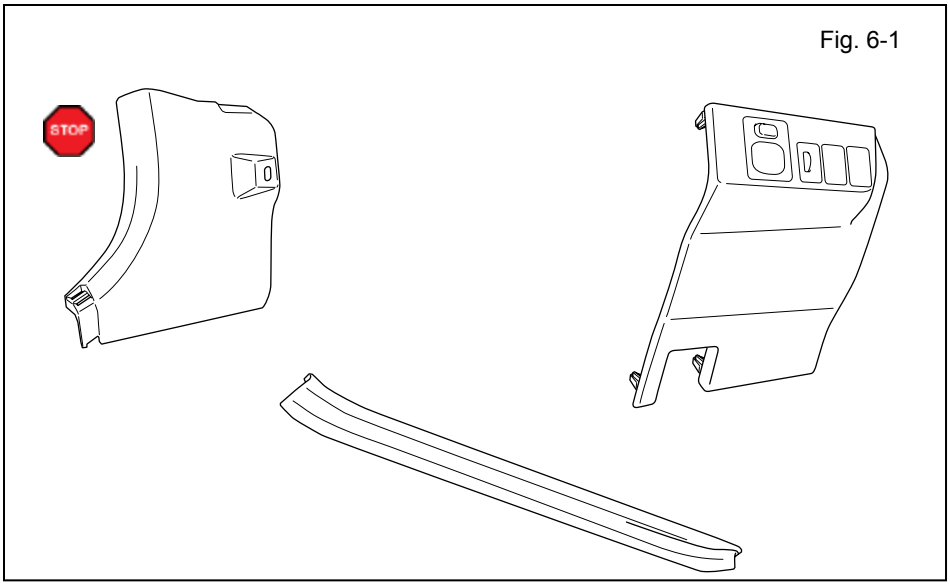


Fig. 6-1

6. Complete the Installation.

a. Finish reassembling the Vehicle.

VERIFY: That panels fit together properly, with no uneven gaps.

VERIFY: That all Connectors are plugged in.

Torque Wrench

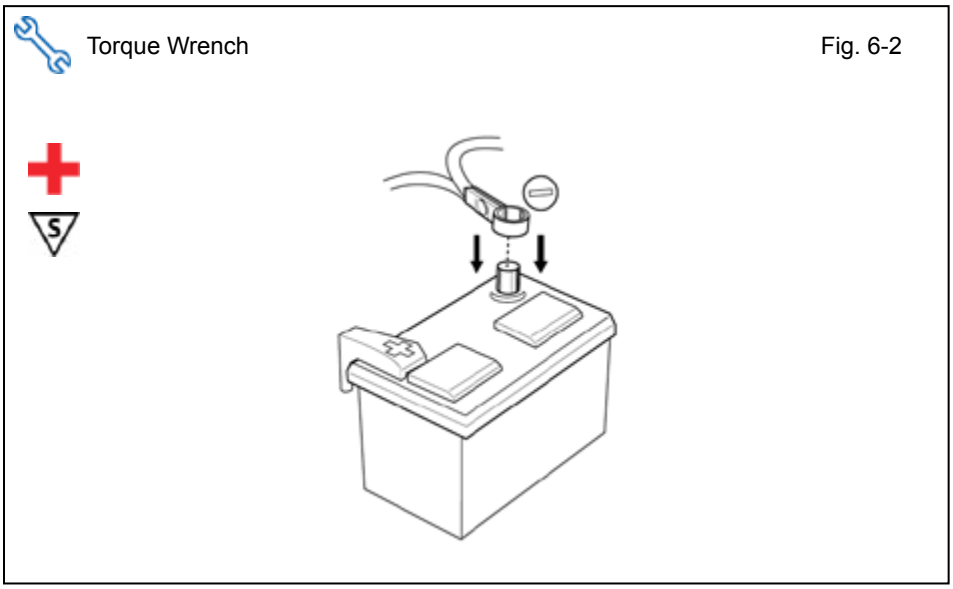


Fig. 6-2

b. Position the Negative Battery Cable at the original factory position.

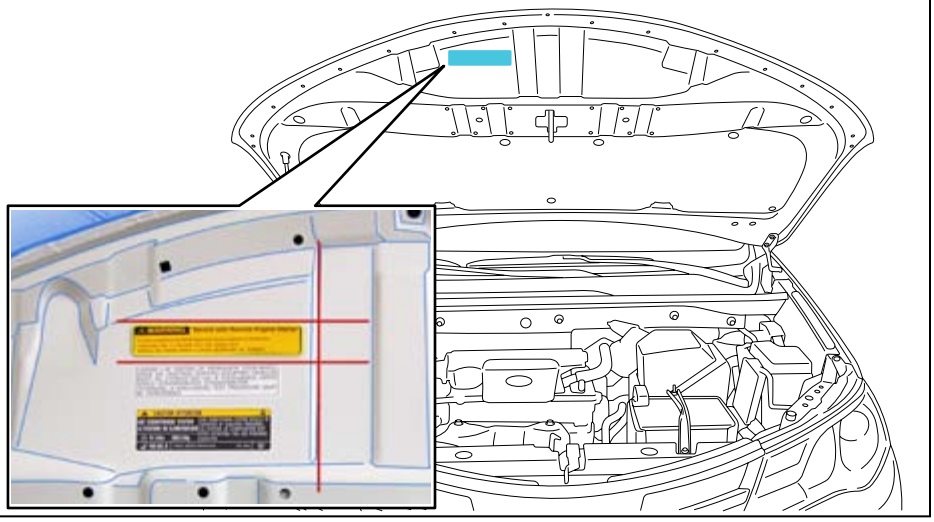
Torque: 5.4 N•m (48 in•lbf)

CAUTION: Do not touch the positive terminal.

c. Clean up and Remove trash.

d. Sealed in its protective bag, place the Owner's Manual in the Glove Box.

Fig. 7-1



7. Tags and Labels.

For US Vehicles use the English Tags and Labels and dispose of the Spanish ones.

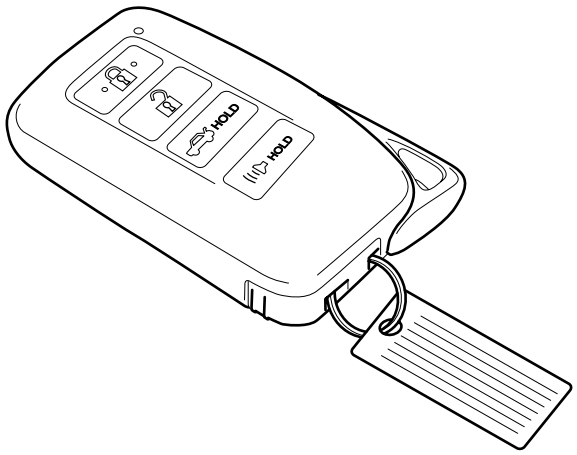
For Mexico Vehicles use the Spanish Tags and Labels and dispose of the English ones.

a. Using VDC approved cleaner and cleaning method, clean the area indicated in the Underside of the Hood.

b. Attach the Engine Room Label as shown.

CAUTION: Do not touch the adhesive surface.

Fig. 7-2

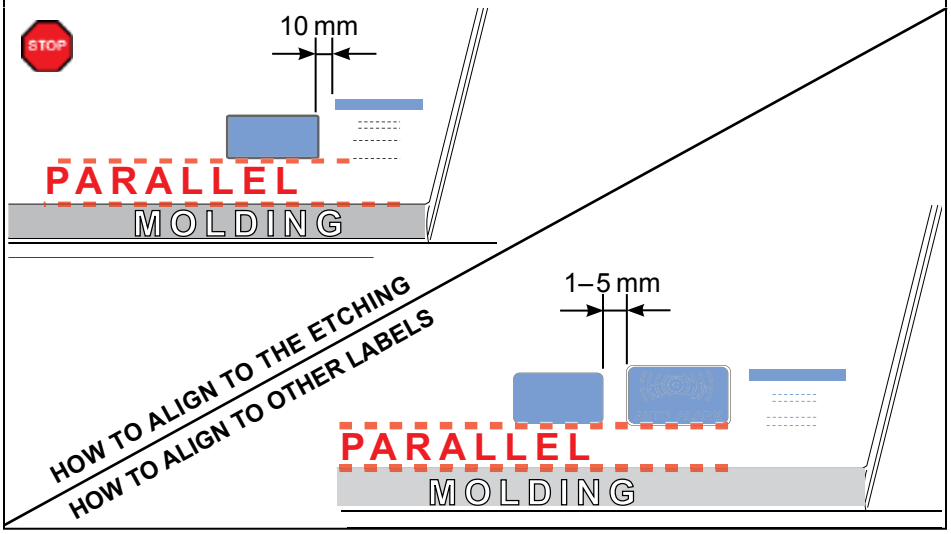


c. Attach the Key Tag.

REPEAT: Step c with the other Smart Key

Clear Tape

Fig. 7-3



d. Use Household Glass Cleaner to clean the inside of the Front Door Window.

e. Use a piece of Clear Tape to lift the Label from the protective backing.

CAUTION: Do not touch the adhesive surface.

f. Attach the Label as shown.

NOTE: Make sure to Align the Label according to Etching or Other Label.

REPEAT: Steps d-f with the other Front Door Window.

Accessory Function Checks

Close the hood, enter the vehicle and close all doors. Place the shift lever in the “P” (Park) position, set the parking brake and make sure the Vehicle is off.

	Perform	Look For
1	Press the remote control’s lock button twice within 2 seconds, then press and hold the lock button for 3 seconds.	The hazard lights flash after 3 seconds. The engine starts. The hazard lights flash repeatedly for 10 seconds.
2	With the engine running, pull the hood release handle. **NOTE:** *Some Vehicles may require you to exit the Vehicle and pull up on the Hood.*	The engine stops. The hazard lights flash once. The security alarm triggers. (Only if equipped with OE Factory Alarm, not Genuine Accessory alarm, and only if armed)
3	Move the shift lever out of “P” (Park). Attempt to start the Vehicle using the remote.	The engine does not start.

Vehicle Appearance Check

	Perform	Look For
☐	After accessory installation and removal of protective cover(s), perform a visual inspection of the vehicle.	Ensure no damage (including scuffs and scratches) was caused during the installation process. (For PPO installations, refer to TMS Accessory Quality Shipping Standard.)

Vehicle Function Checks

	Function		Function
Enter the Vehicle			
☐	Dome/Courtesy Lights	☐	Steering Wheel Column Adjusts Without Interference
☐	Horn		
Start the Vehicle			
☐	Panel/Switch Illumination	☐	Gauges
☐	Check Engine Light *If the warning light remains on, it may indicate a system malfunction.*	☐	ABS Light (if equipped) *If the warning light remains on, it may indicate a system malfunction.*
☐	Lamp Failure Sensor *If the warning light remains on, it may indicate a system malfunction.*	☐	Track/Skid Control Light (if equipped) *If the warning light remains on, it may indicate a system malfunction.*
☐	Seat Belt Warning Light *If the warning light remains on, it may indicate a system malfunction.*	☐	Tire Pressure Monitoring System (TPMS). *Prior to TPMS activation and Pre-delivery Service (PDS) of the Vehicle the TPMS light will blink when IG is turned on.* *After TPMS activation and PDS of the Vehicle the TPMS light will illuminate for a few seconds and go off when IG is turned on.*
☐	Air Bag Warning Light *If the warning light remains on, it may indicate a system malfunction.*		
☐	Cruise Control Light (if equipped)		
Using a Mirror or Assistant check the following.			
☐	Trunk/Tailgate/Bed Lights (if equipped)	☐	Tail Lights
☐	Brake Lights	☐	Daytime Running Lights (if equipped)
☐	Backup Lights	☐	Marker Lights
☐	Clearance Sonar (if equipped)	☐	Power Back Door/Hatch (if equipped)
Stop the Engine, Place the Vehicle's IG in the ON position.			
☐	Hazard Lights	☐	Turn Signal Lights
☐	Head Lights	☐	Fog Lights (if equipped)
☐	High Beams	☐	Accessory Controls/Illumination (if equipped)
☐	Power Side Mirrors (if equipped)	☐	Convenience Memory Settings (if equipped)
☐	Power Sliding Door (if equipped)	☐	Rear Sunshade (if equipped)

	Function		Function
☐	Front Wiper/Washer	☐	Rear Wiper/Washer (if equipped)
☐	Power Sun/Moon Roof (if equipped)	☐	Rollover Side Curtain Air Bag Switch (RSCA) (if equipped)
☐	Clock (if equipped)	☐	Navigation System (if equipped)
☐	Audio/Video (if equipped)	☐	USB Connections (if equipped)
☐	Steering Wheel Audio Control (if equipped)	☐	HVAC
☐	Front Windshield Defogger (if equipped)	☐	Rear Window Defogger (if equipped)
☐	Side Mirror Defogger (if equipped)	☐	Accessory Power Socket (if equipped)
☐	Massage Seats (if equipped)	☐	Heated/Vented Seats (if equipped)

☐	Glove Box Light (if equipped)	☐	Trunk or Back Door/Hatch Cancel Switch (if equipped)

☐	Power Locks (if equipped)	☐	Power Windows (if equipped)
☐	Power Seats (if equipped)	☐	Key Sensor Buzzer

Remove the 30A fuse after Function check.
Check with your Port/Dealer to see if this step is necessary.

