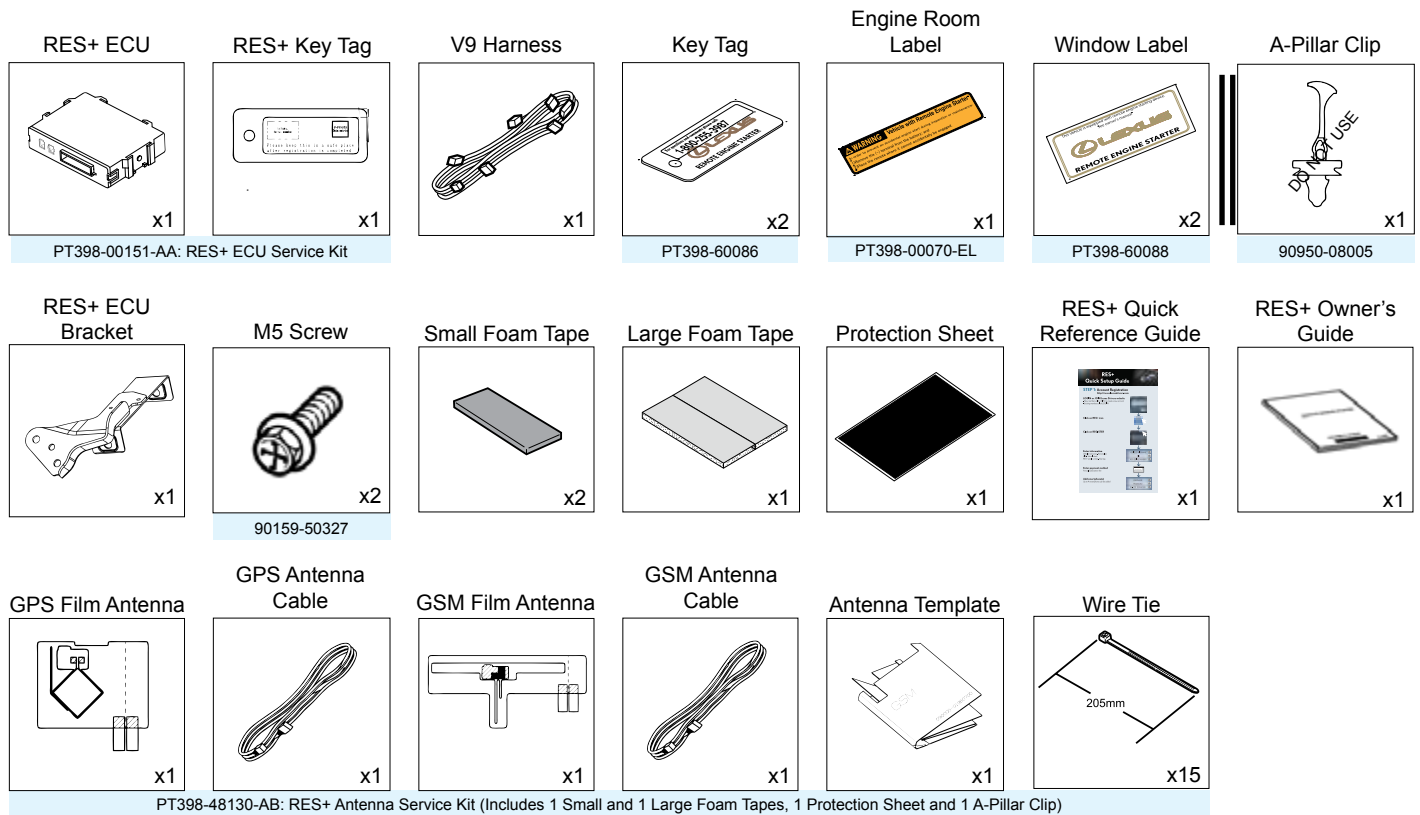


Part #: PT398-48151

Conflicts:

Kit Contents



Service Part #s

Additional Items

(may be required)

Item#	Description
1	A-Pillar Clip P/N 62217-48030

Recommended Sequence of Application

Item#	Description

Recommended Tools

Personal & Vehicle Protection	Description
Safety Glasses	
Safety Gloves	(Optional)
Vehicle Protection	Blankets, Parts Boxes
Special Tools	
Techstream	Use latest Version on TIS
Squeegee	4" 3M™ Orange Applicator #71607
Installation Tools	
Screwdriver	#2 Phillips
Nylon Panel Removal Tool	e.g. Panel Pry Tool #1 Toyota SST# 00002-06001-01
Side Cutters	
Torque Wrench	48 in•lbf (5.4 N•m), 88.5 in•lbf (10 N•m)
Ruler	
Utility Knife	
Needle Nose Pliers	
Tape	Clear, Electrical, Masking
Socket	8mm, 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.

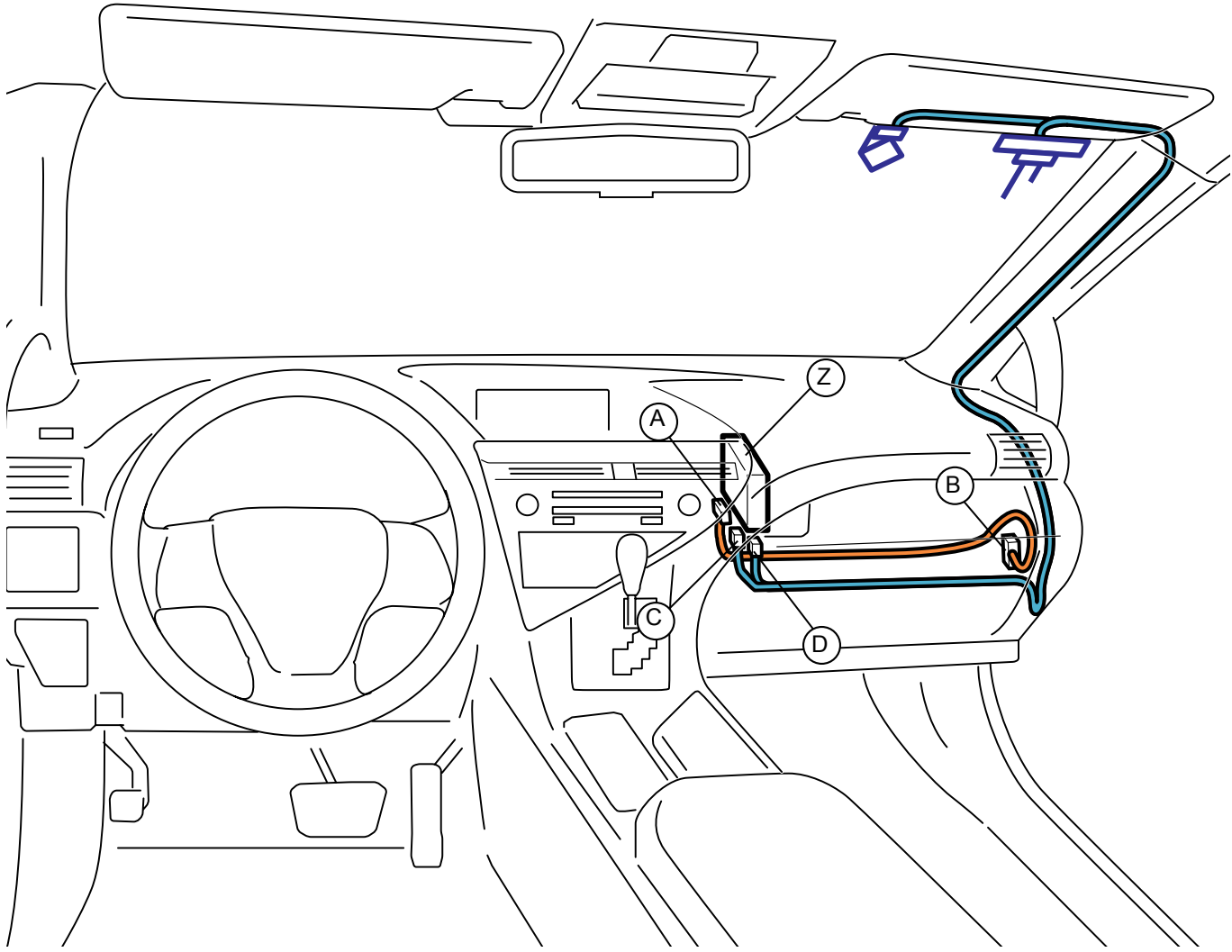
This document covers such items as:


- 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 Lexus dealer for a copy of this document.

TVIP	Vehicle	Description
A	-	24P White <i>(for RES+ ECU)</i>
B	eF1	12P White
C	-	1P Blue <i>(for RES+ ECU)</i>
D	-	1P Gray <i>(for RES+ ECU)</i>
Z	-	RES+ ECU


Lexus RX450h RES+ Wire Harness Outline



1	Spare Tire Cover	7	Seat Temperature Control Unit	13	PS Dash Trim
2	Battery Cover	8	Shift Knob	14	A-Pillar Trim
3	PS Step Cover	9	Center Console	15	Engine Cover
4	PS Cowl Cover	10	Center Console Side Trim	16	Fuse Box Cover
5	Glove box Under Cover	11	PS Knee Airbag	 Disconnect all Corresponding Connectors.	
6	Glove box Side Trim	12	Glove box		

Disassembly Overview




 Nylon Panel Removal Tool, 10mm Socket



1. Disassembly (Luggage Compartment)

- a. Place the Vehicle in Park with the Parking Brake set.
- b. Remove the Spare Tire Cover.

- c. Remove the Battery Cover.
 - Press then remove 3 Clips.
- d. 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.





Nylon Panel Removal Tool

Fig. 2-1

**2. Disassembly.
(Passenger's Side)**

- a. Remove the Passenger's Side Step Cover.



Nylon Panel Removal Tool

Fig. 2-2

- b. Remove the Passenger's Side Cowl Cover.

Fig. 2-3

- c. Remove the Glove Box Under Cover.



- d. Remove the Glove Box Side Trim.



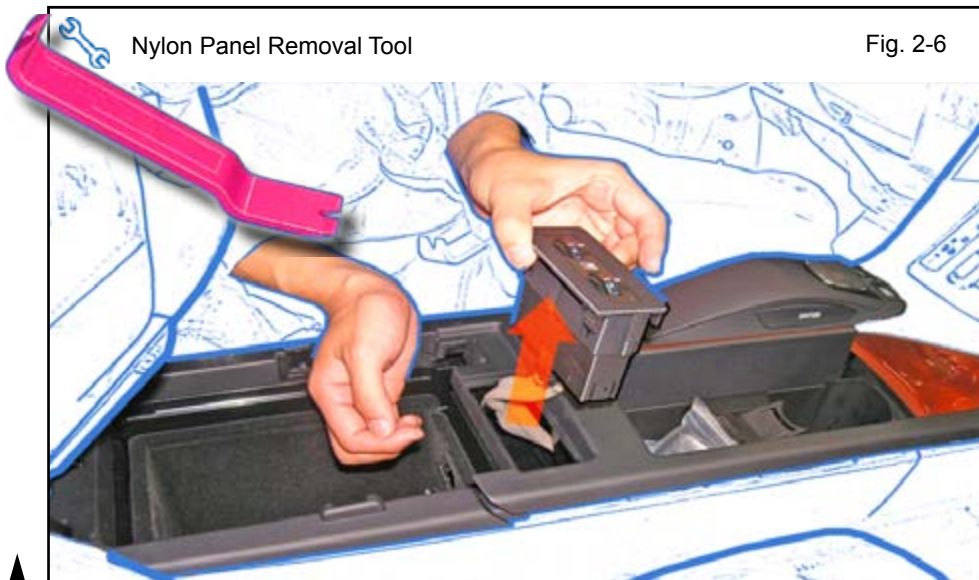
Nylon Panel Removal Tool

Fig. 2-4



Fig. 2-5

- e. Open Center Console Compartment.



Nylon Panel Removal Tool

Fig. 2-6

- f. Remove Seat Temperature Control Unit.
• Disconnect Vehicle's Connector.

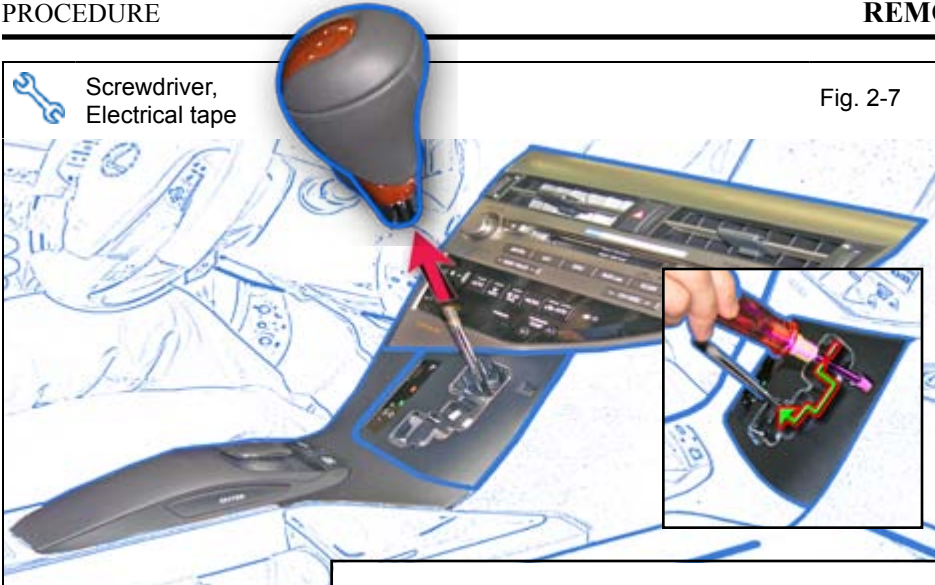



Fig. 2-7

- g. Remove the Shift knob by turning counter-clockwise.
- h. Push on the Shift Release with taped screwdriver and Shift to Neutral.

 Screwdriver,
Electrical tape

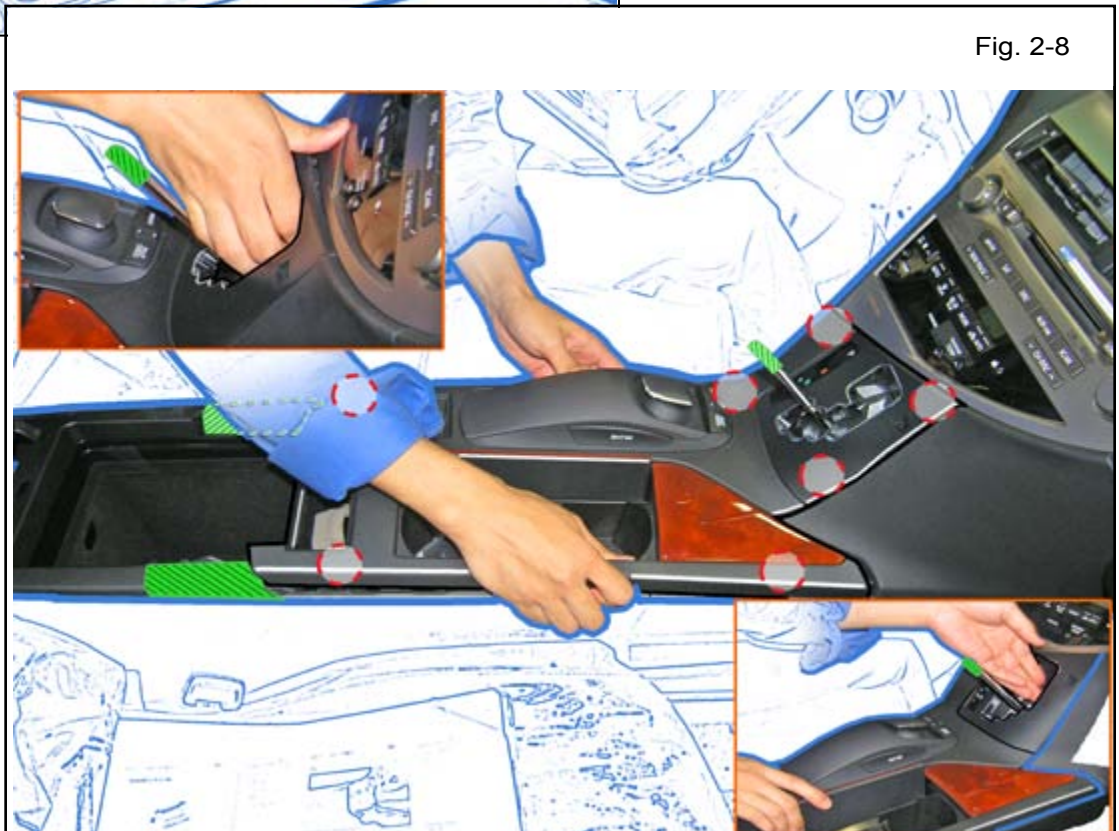
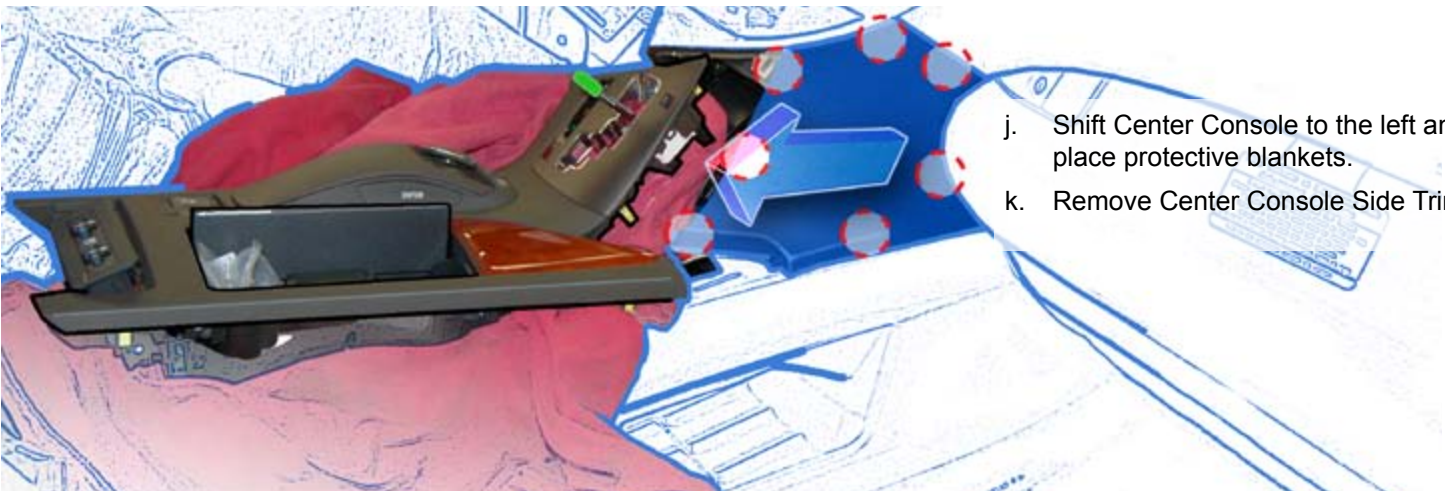


Fig. 2-8

- i. Pull on the Left side Shifter Cover, then pull the Center Console up and pull on the Right side Shifter Cover.



- Add Protection Tape on the Shifter and part of the Center Console Compartment area.



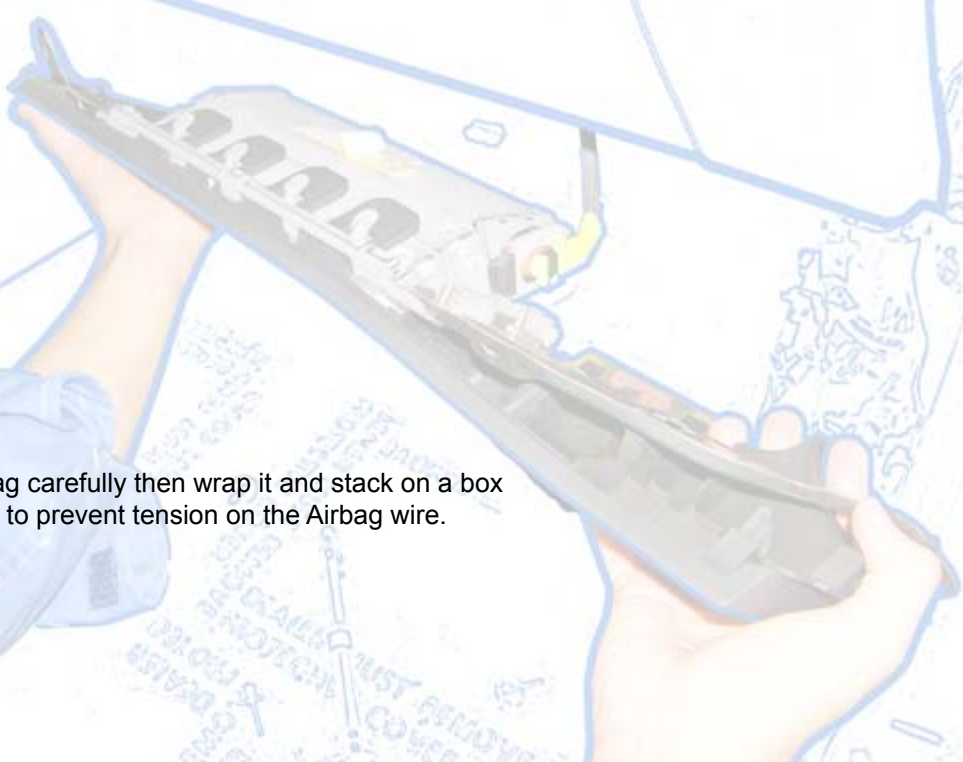
- j. Shift Center Console to the left and place protective blankets.
- k. Remove Center Console Side Trim.

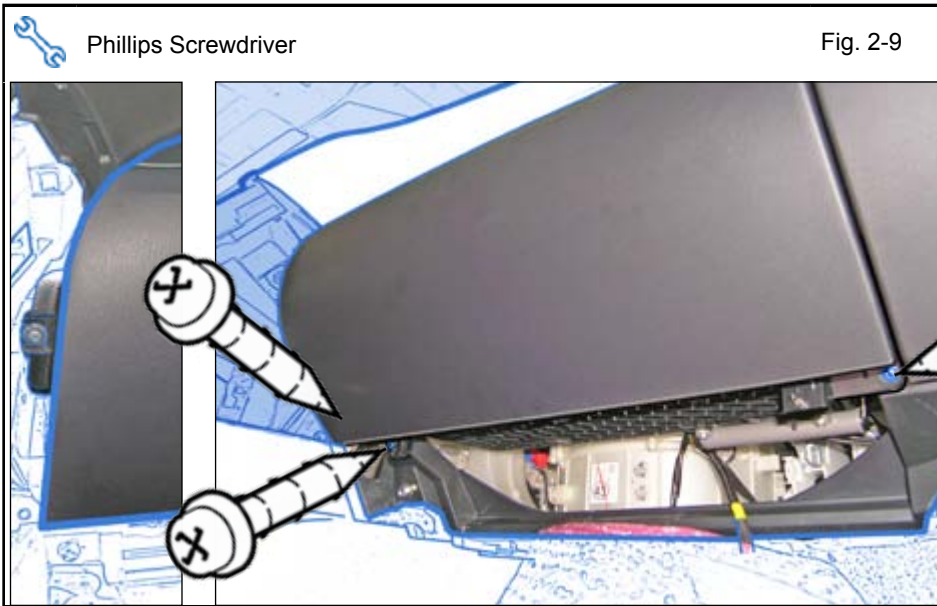
 10mm Socket, Extension

I. Remove 3 Bolts.

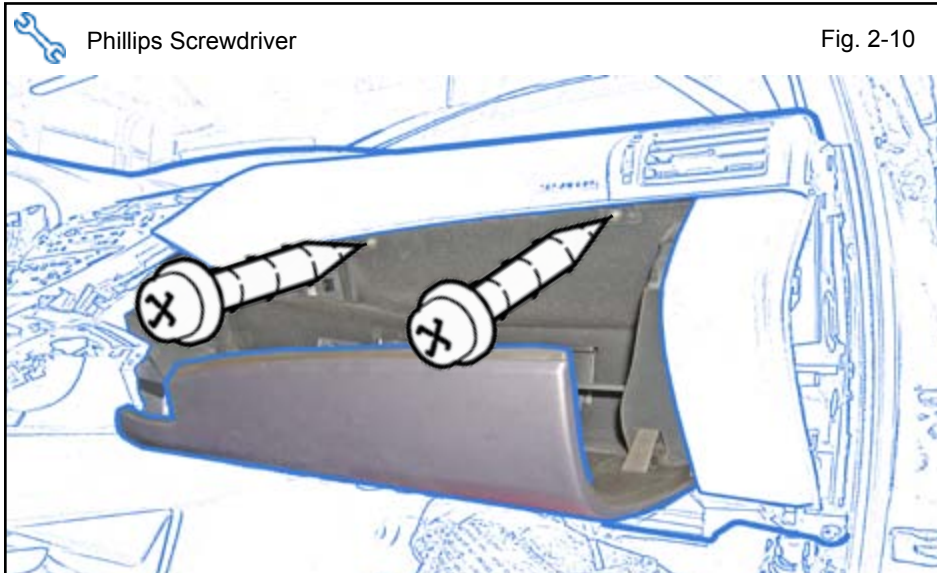


m. Remove Knee Airbag carefully then wrap it and stack on a box to lift it high enough to prevent tension on the Airbag wire.





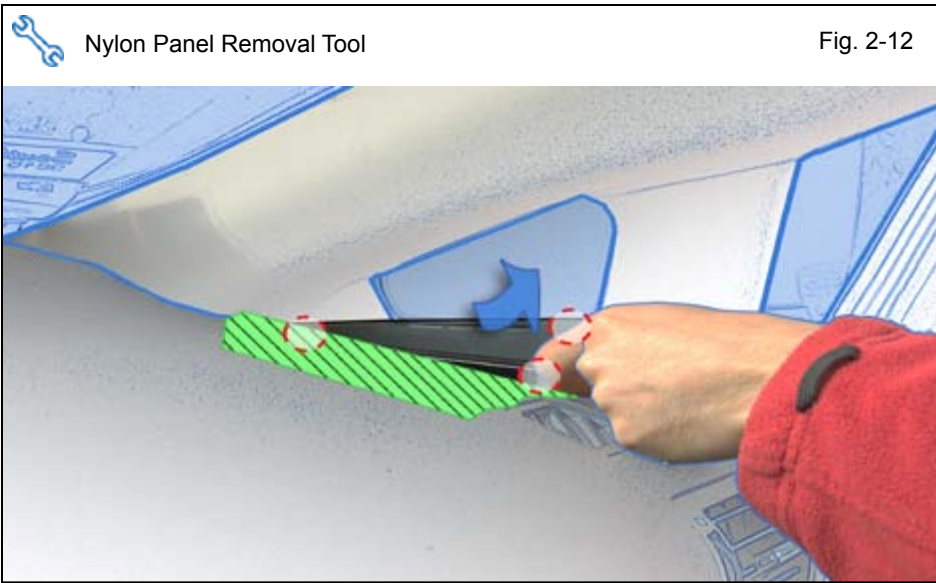
- n. Remove 3 screws from the bottom of the Glove Box.



- o. Open the Glove Box and remove 2 Screws.



- p. Remove the Glove Box by pulling it towards the left side.
- Disconnect Vehicle Connectors and remove the Connector Clamp from upper left side of Glove box.



Nylon Panel Removal Tool

Fig. 2-12

- q. Remove the Passenger's side Dash Trim at the base of the A-Pillar.
 - Add Protective Tape to Pry area.



Nylon Panel Removal Tool, Needle Nose Pliers with Masking Tape

Fig. 2-13

- r. Dislodge the Passenger's side A-Pillar Trim.

STOP CAUTION: The trim will only loosen as shown. Trying to remove it without dislodging the internal clip will cause it to break.

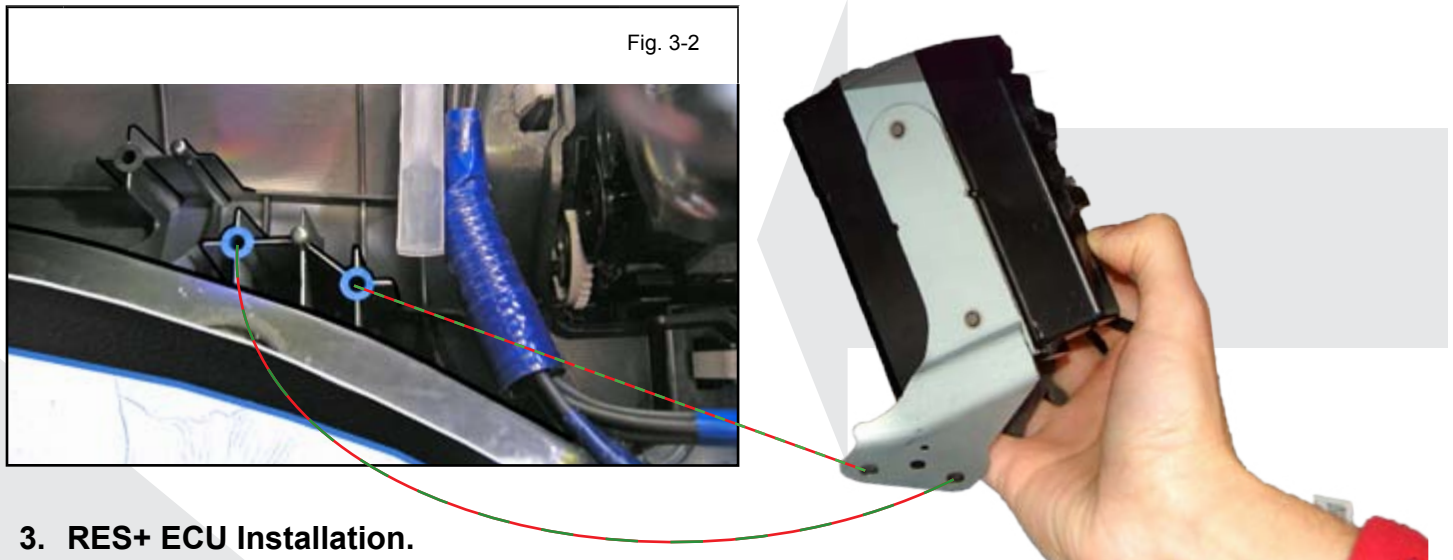
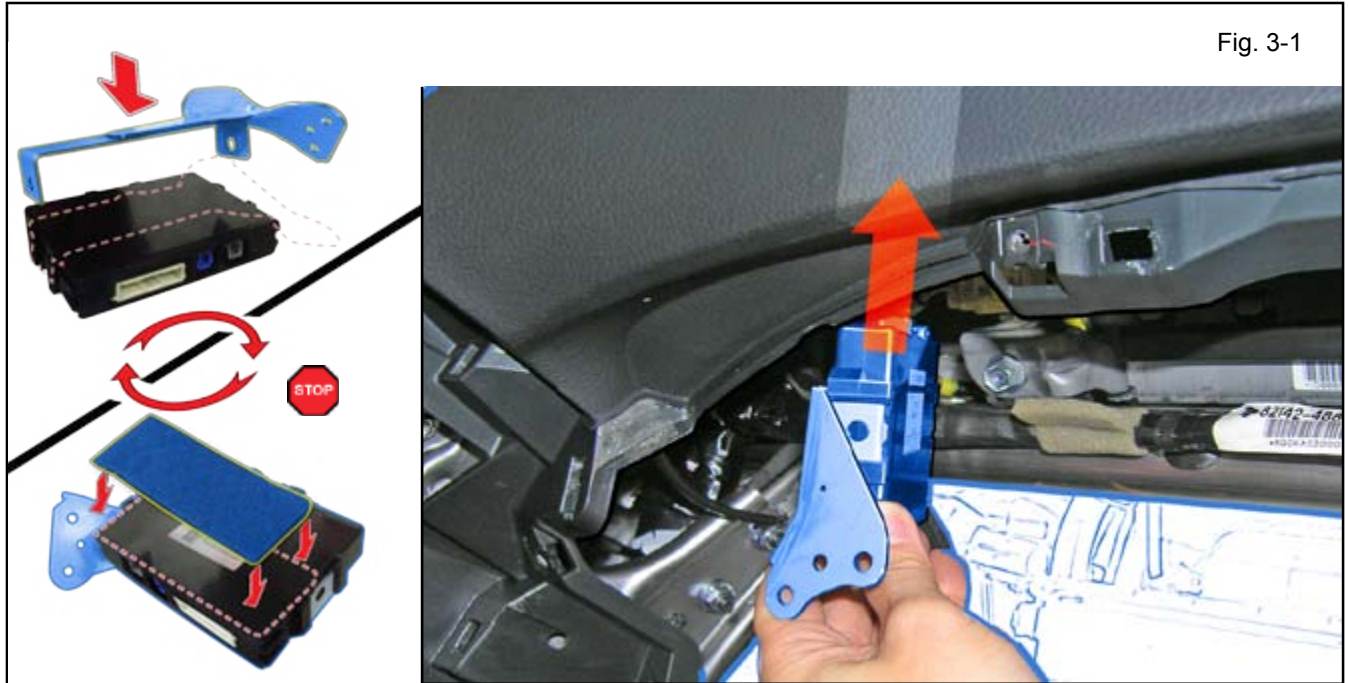
- s. With the jaws of the pliers wrapped in tape to prevent damage, rotate the end of the Clip 90°, and then pull the Trim out to disengage the Clip.

STOP CAUTION: If the Clip is damaged (i.e. scar) or removed from the body, replace it with a new one. Confirm latest clip P/N on electronic parts catalog



Fig. 2-14

- t. Remove the Passenger's side A-Pillar Trim.



3. RES+ ECU Installation.

- a. Attach the ECU bracket to RES+ ECU.
- b. Apply 1 Small Foam tape on the edge of the RES+ ECU.



NOTE: Make sure not to cover the RES+ ECU Serial no. label with the Foam Tape.

- c. Position the RES+ ECU on the vehicle location shown.



- d. Install the RES+ ECU to the vehicle using 2 Bolts.

Fig. 3-5

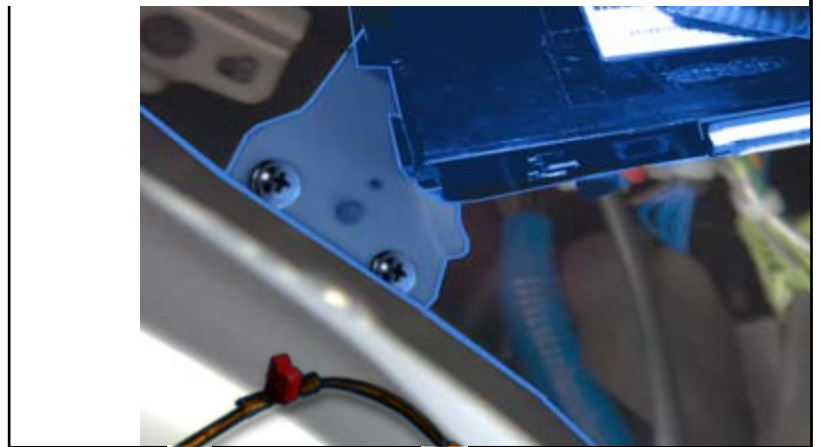
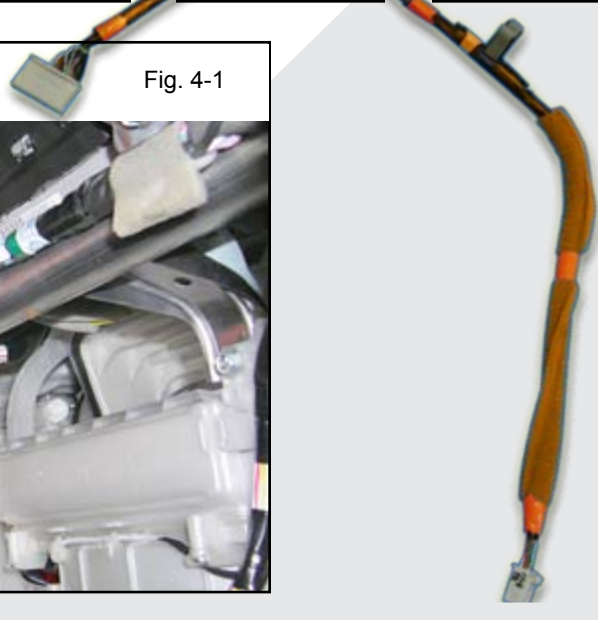
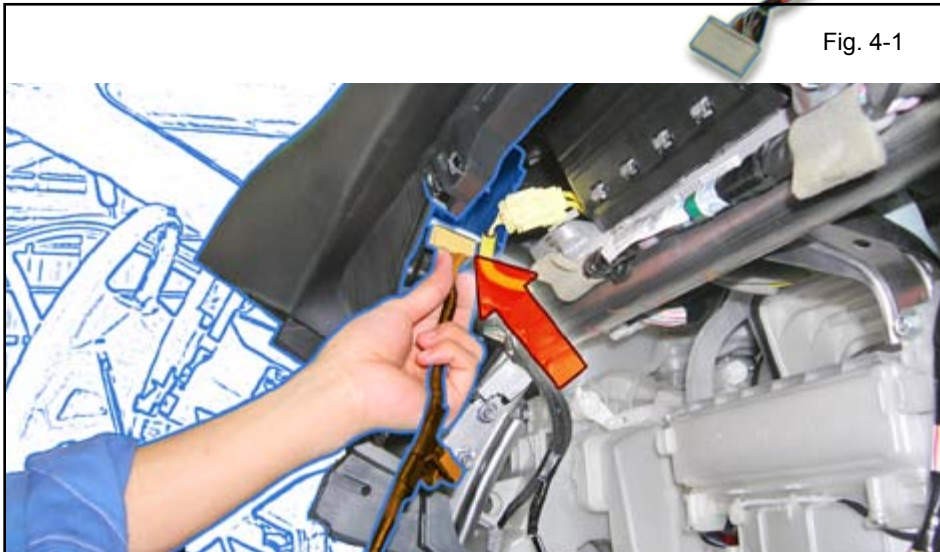


Fig. 4-1



4. V9 Harness Installation.

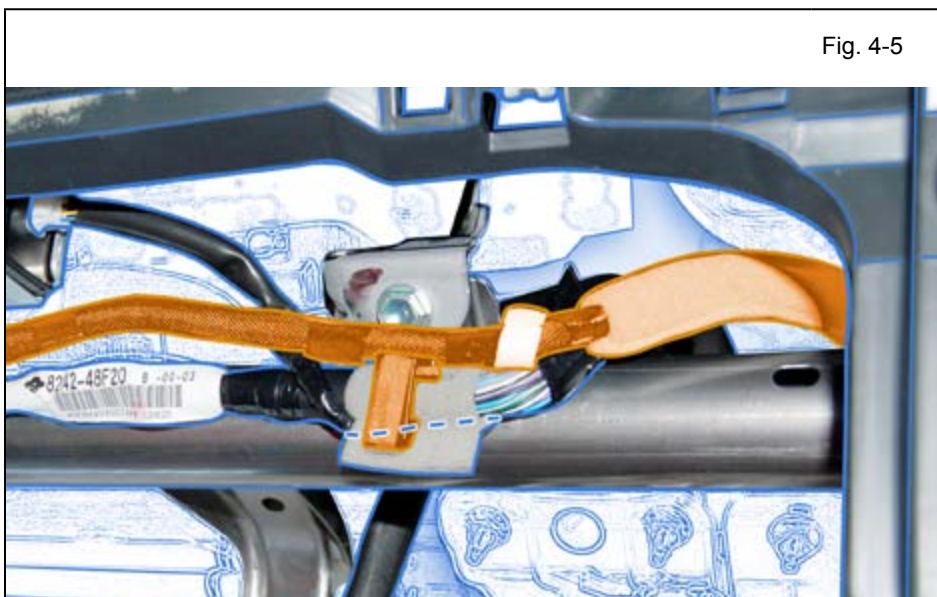
- a. Connect V9 24P Connector to the RES+ ECU.
- b. Use V9 Harness Clamp to attach over the Vehicle Harness's Foam tape.

Fig. 4-2



- c. Route the V9 Harness along the Vehicle's Harness, then route behind the Vehicle's I/P Reinforcement.

- d. Plug in the V9 Harness's 12P Connector to the Vehicle's 12P Pre-Connector in the location shown.



- e. Use the V9 Harness Clamp to attach over the Vehicle Harness's Foam tape.

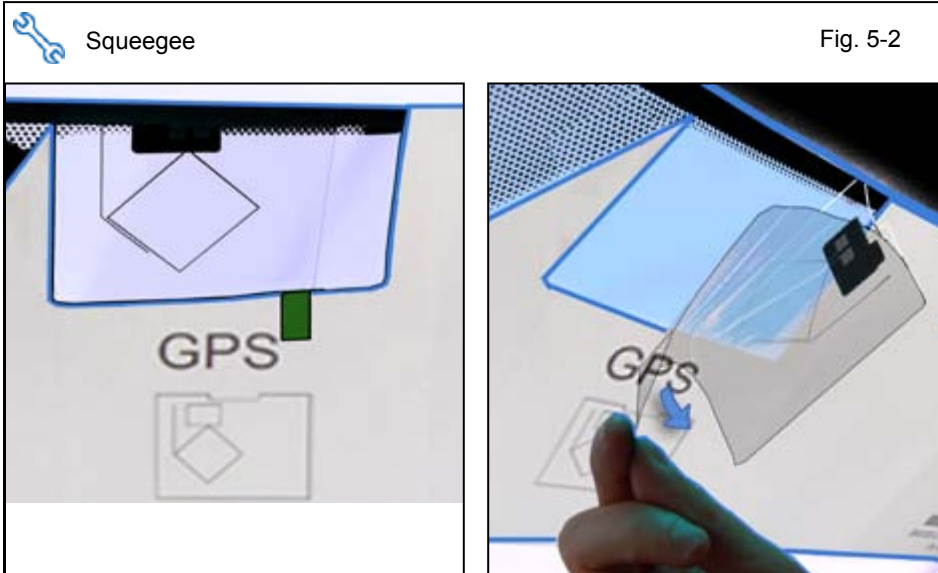


5. GPS and GSM Antenna Installation.

- a. Use Household Glass Cleaner to clean the inside of the Passenger's side Windshield.
- b. Line up the Antenna Template to the edges of the Headliner and A-Pillar on the Passenger's side Windshield.
 - Use clear tape to attach Template to the Windshield.



NOTE: Make sure not to apply tape over areas where the Film Antennas will be placed.



- c. Use the Blue Tab to remove the partial protective backing and attach the GPS Film Antenna on the specified Template location on the Windshield.

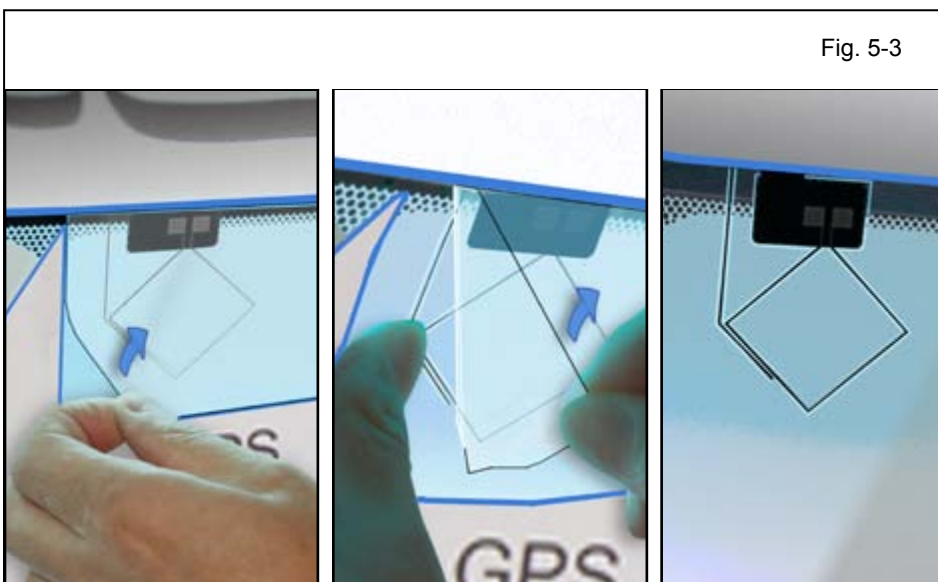


• Line up the Film Antenna to the Headliner edge.

- d. Use the Green Tab to peel off remaining protective backing to attach the whole GPS Film Antenna on the Windshield.



NOTE: Make sure to use a squeegee when attaching Film Antenna onto the Windshield to eliminate any Air Bubbles.



- e. Carefully and slowly peel off the top protective sticker leaving only the GPS Film Antenna on the Windshield.
- f. Use a soft cloth to press on the Film Antenna for it to fully adhere to the Windshield and to eliminate any Air Bubbles.



CAUTION: Do not use hard tools like spatulas, squeegee, etc., once the top protective film has been removed.



CAUTION: Do not touch the GPS Film Antenna Terminal.



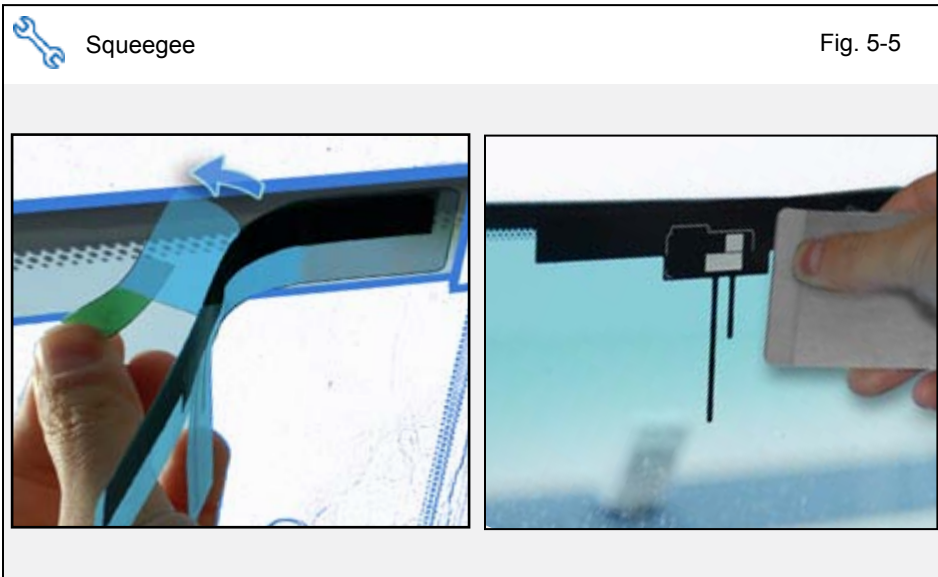
- g. Use no. 1 Tab to remove the partial protective backing from the GSM Film Antenna.
- h. Attach the GSM Film Antenna on the specified Template location on the Windshield.



- Line up the Film Antenna to the Headliner edge.



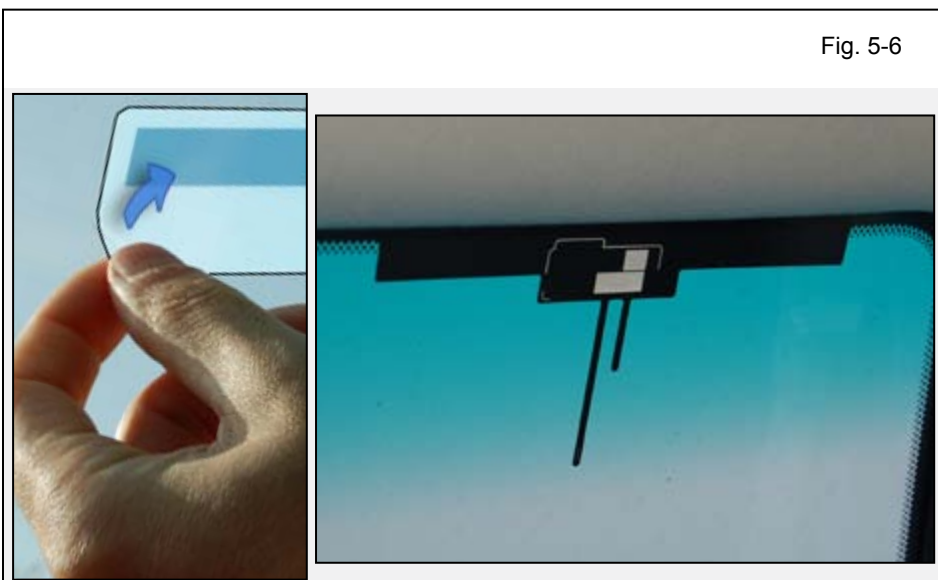
NOTE: Make sure to use a Squeegee when attaching Film Antenna onto the Windshield to eliminate any Air Bubbles.



- i. Use the no. 2 Tab to peel off remaining protective backing to attach the remaining part of the GSM Film Antenna on the Windshield.



NOTE: Make sure to use a Squeegee when attaching Film Antenna onto the Windshield to eliminate any Air Bubbles.



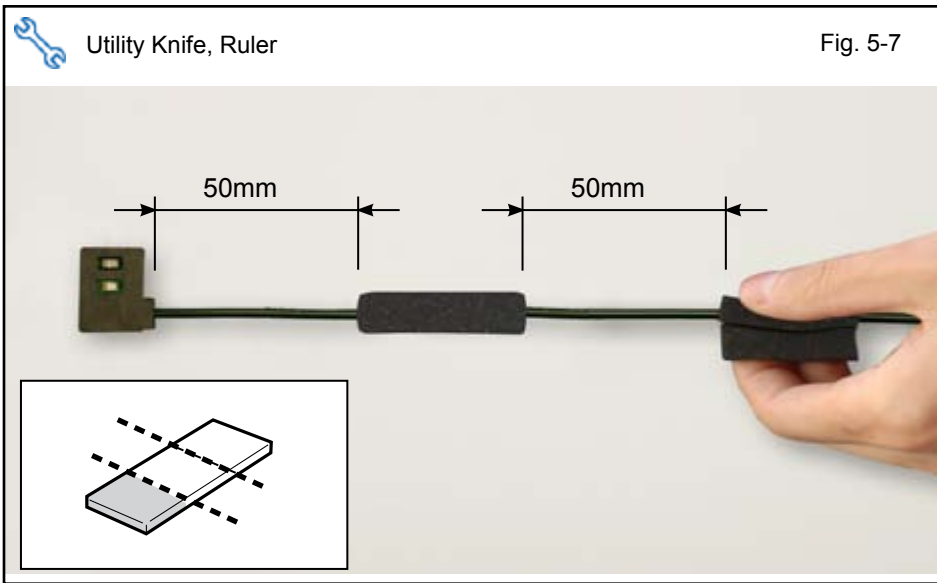
- j. Carefully and slowly peel off the top protective sticker leaving only the GSM Film Antenna on the Windshield.
- k. Use a soft cloth to press on the Film Antenna for it to fully adhere to the Windshield and to eliminate any Air Bubbles.



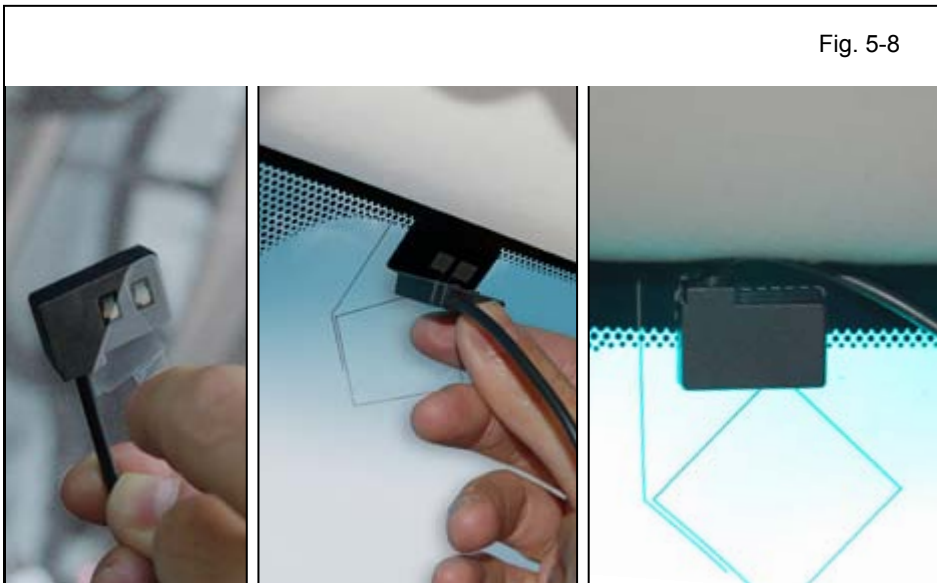
CAUTION: Do not use hard tools like spatulas, squeegee, etc., once the top protective film has been removed.



CAUTION: Do not touch the GSM Film Antenna Terminal.



- l. Cut the Small Foam tape into 1/3 pieces as shown.
- m. Wrap the GPS Antenna Wire with 1/3 piece of Small Foam tape 50mm away from the GPS Antenna.
- n. Wrap another 1/3 piece of Small Foam tape 50mm away from the first Foam tape



- o. Peel off the protective backing from the GPS Antenna.
- p. Attach the GPS Antenna to the GPS Film Antenna on the Windshield.



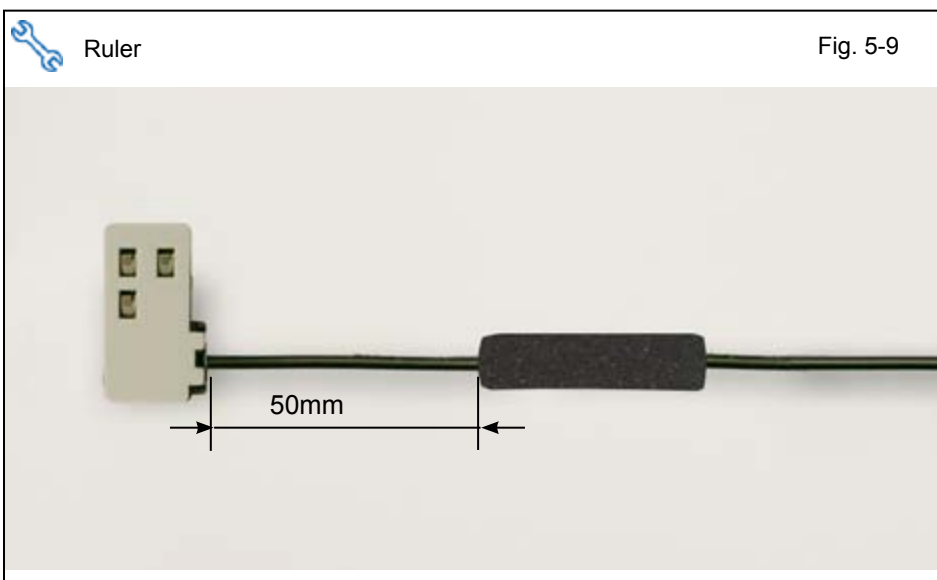
NOTE: Make sure to align the GPS Antenna to the broken line guide on the GPS Film Antenna.



CAUTION: Do not touch the Terminal and adhesive face of the GPS Antenna.



CAUTION: Do not re-attach the GPS Antenna.



- q. Wrap the GSM Antenna Wire with the remaining 1/3 piece of Small Foam tape 50mm away from the GSM Antenna.

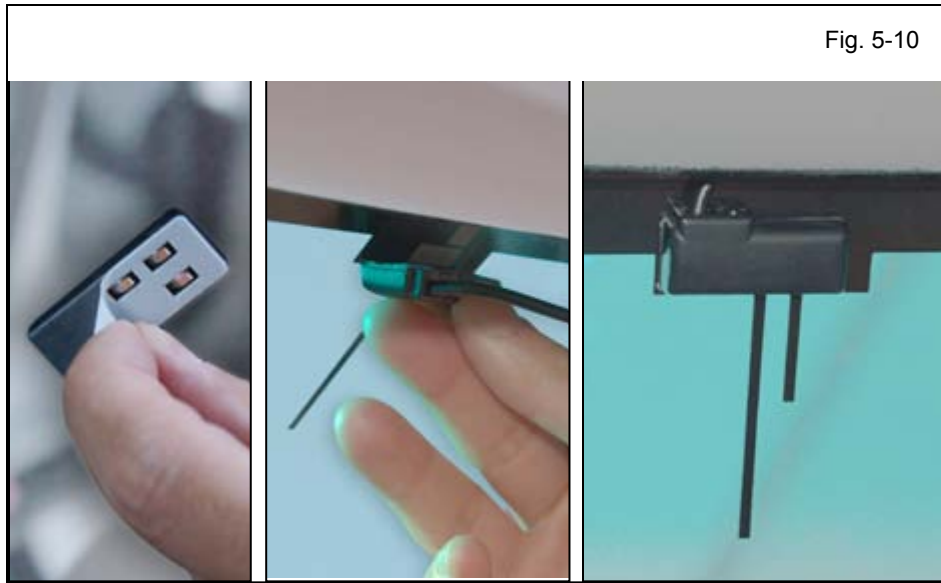


Fig. 5-10

- r. Peel the protective backing off the GSM Antenna.
- s. Attach the GSM Antenna to the GSM Film Antenna on the Windshield.



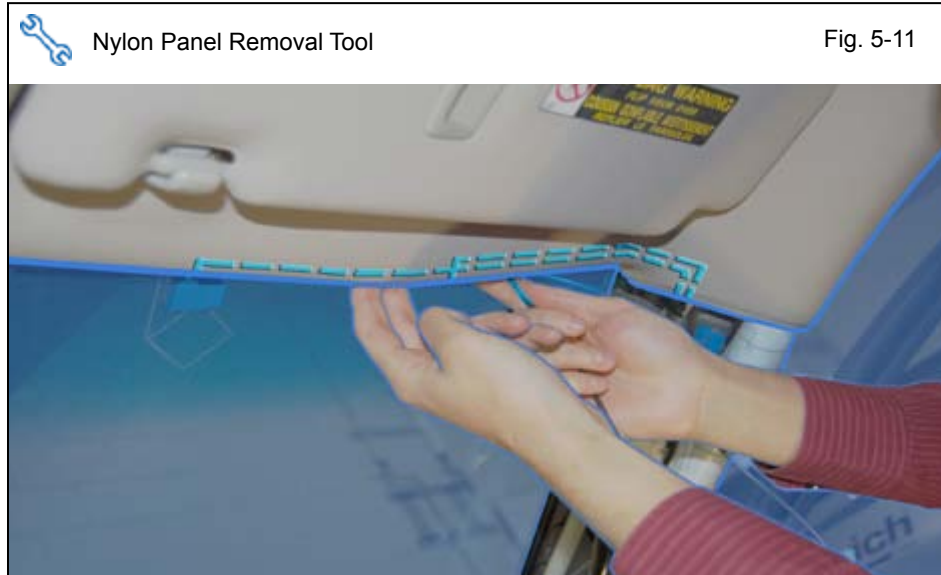
NOTE: Make sure to align the GSM Antenna to Line guide on the Film Antenna.



CAUTION: Do not touch the Terminal and adhesive face of the GSM Antenna.



CAUTION: Do not re-attach the GSM Antenna.

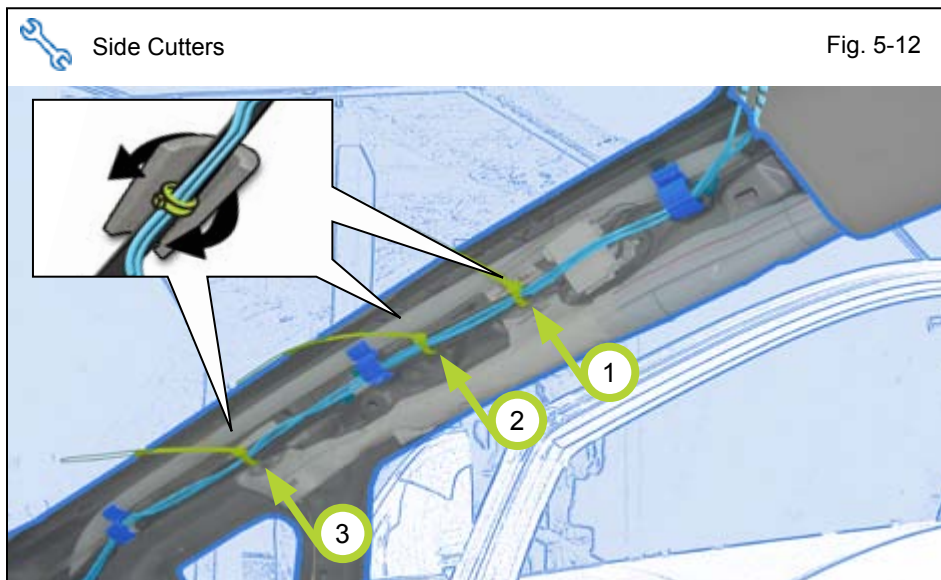
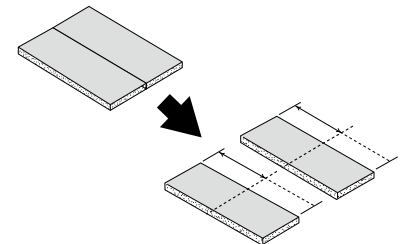


Nylon Panel Removal Tool

Fig. 5-11

- t. Tuck both Antenna Wires in between the Headliner and the Windshield routing them toward the Passenger's side A-Pillar area.

- u. Cut the Large Foam tapes into 1/2 pieces.



Side Cutters

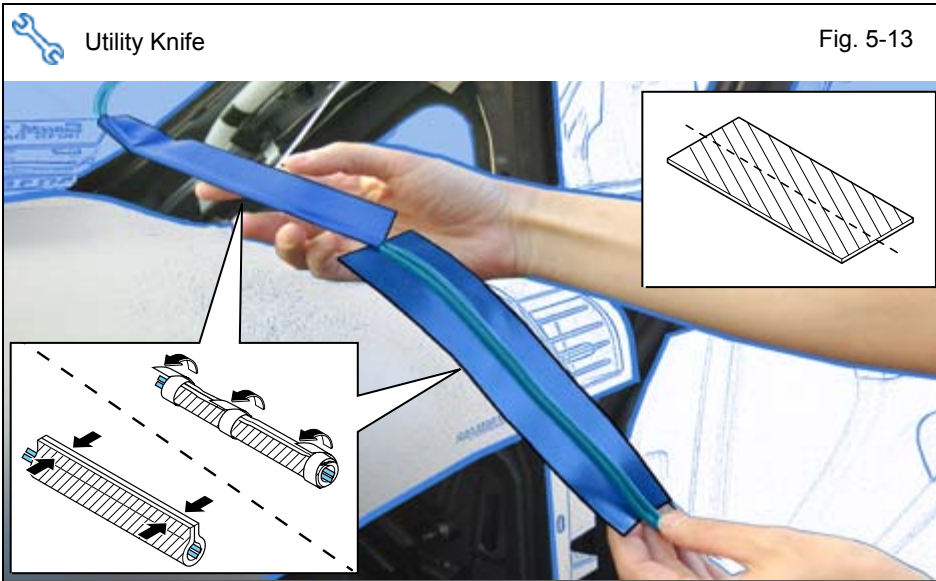
Fig. 5-12

- v. Route both Antenna Wires along the Vehicle Harness and secure them using the 3 Vehicle Harness Clips.
- w. Secure the Antenna Wires to the Vehicle's Harness using 3 Wire Ties.

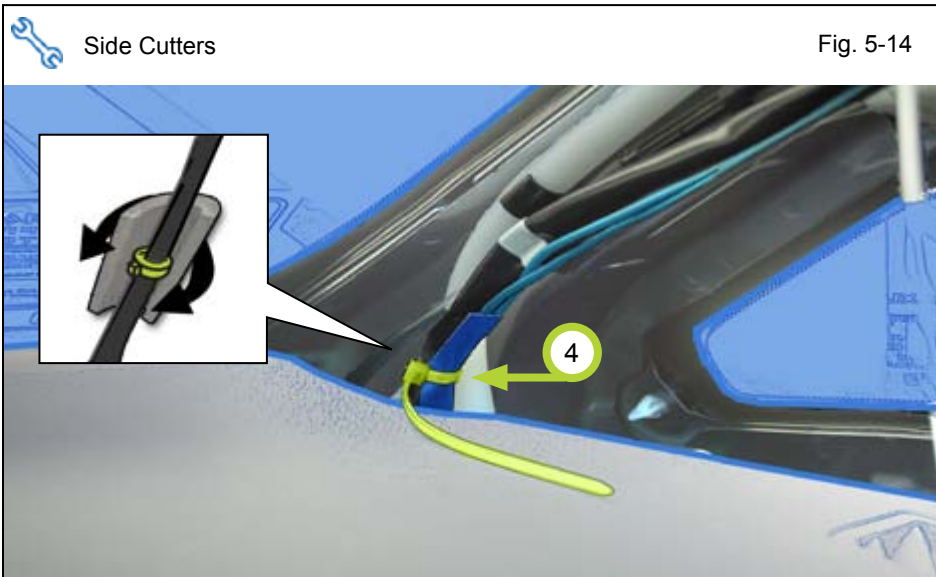


NOTE: Do not secure Antenna Wires to Vehicle's Drain Hose or Airbag.

- x. Wrap a 1/2 piece of Large Foam tape to each one of the Clipped Wire Ties.



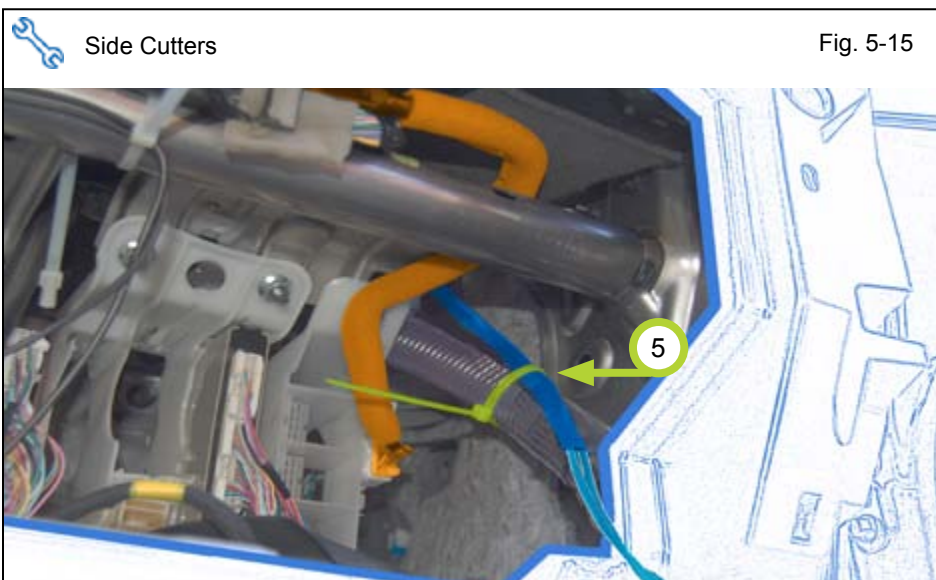
- y. Cut Protection Sheet in Half as shown.
- z. Wrap both Antenna Wires starting from the bottom of the A-Pillar using the 2 Half pieces of Protection Sheet.
- aa. Secure the Protection Sheet with Electrical tape as shown.



- ab. Continue routing Antenna Wires down towards the Glove box Area.
- ac. Secure the Protection Sheet wrapped Antenna Wires to the Vehicle's Harness using 1 Wire Tie.



- NOTE:** Do not secure Antenna Wires to Vehicle's Drain Hose
- ad. Clip the Wire Tie and wrap with a 1/2 piece of Large Foam tape.



- ae. Route the Antenna Wires underneath the Vehicle's I/P Reinforcement and secure to the Vehicle's Wire Harness.

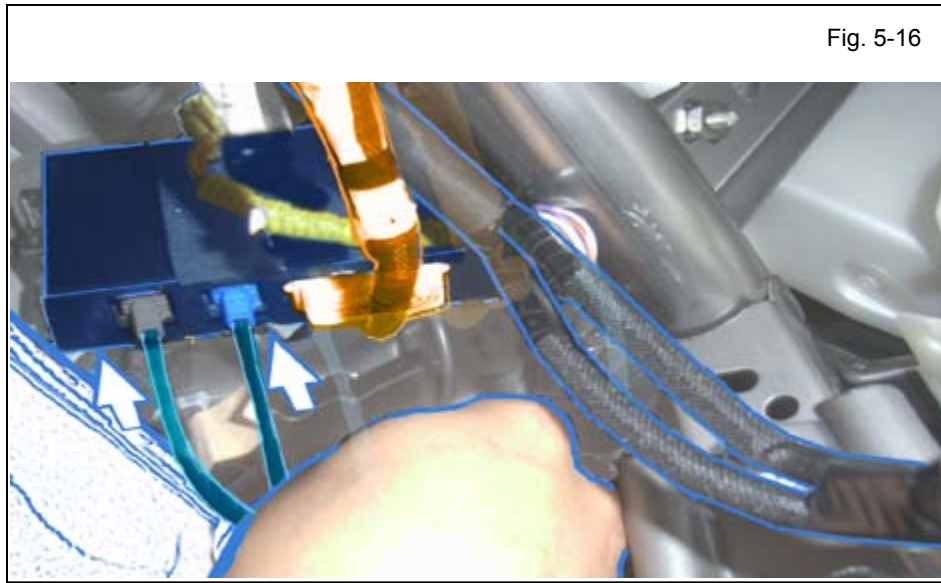


Fig. 5-16

- af. Connect both the GPS and GSM Antenna Connectors to the RES+ ECU.

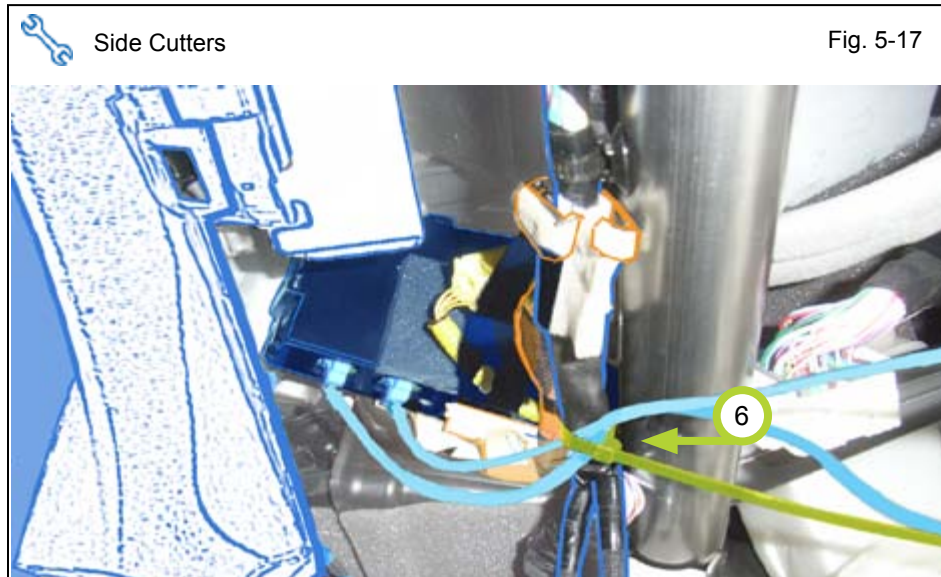


Fig. 5-17

- ag. Secure both Antenna Wires to the Vehicle's Harness with 1 Wire Tie.

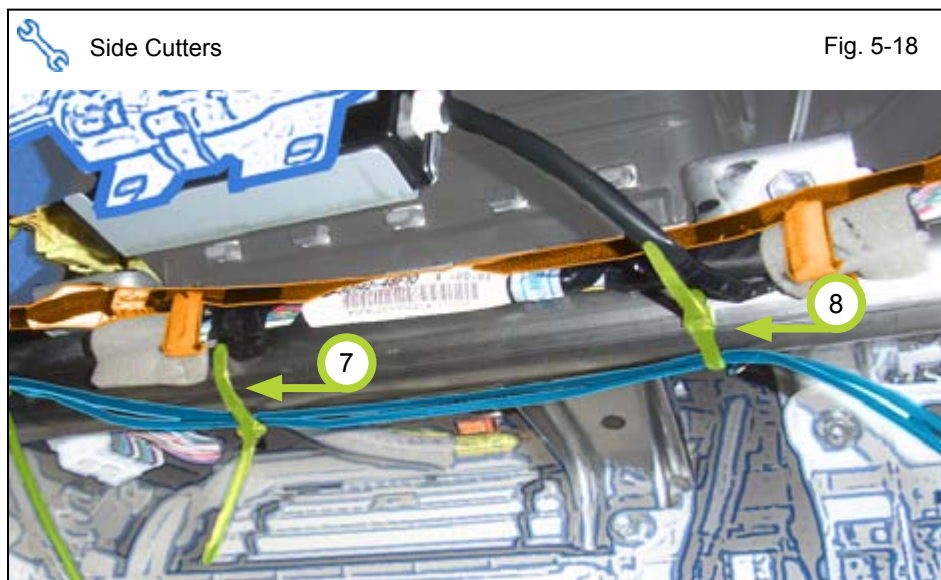
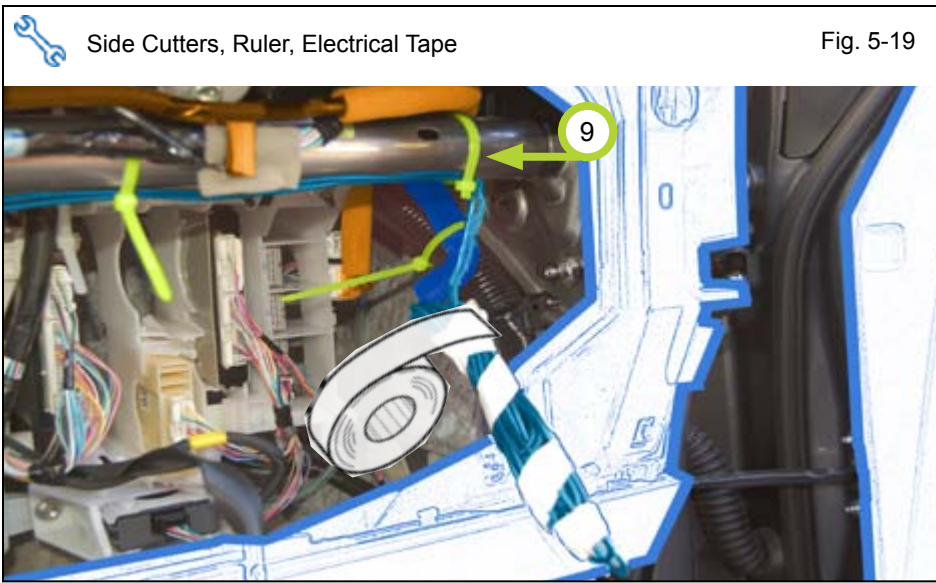


Fig. 5-18

- ah. Secure both Antenna Wires to the Vehicle's I/P Reinforcement with 2 Wire Ties.



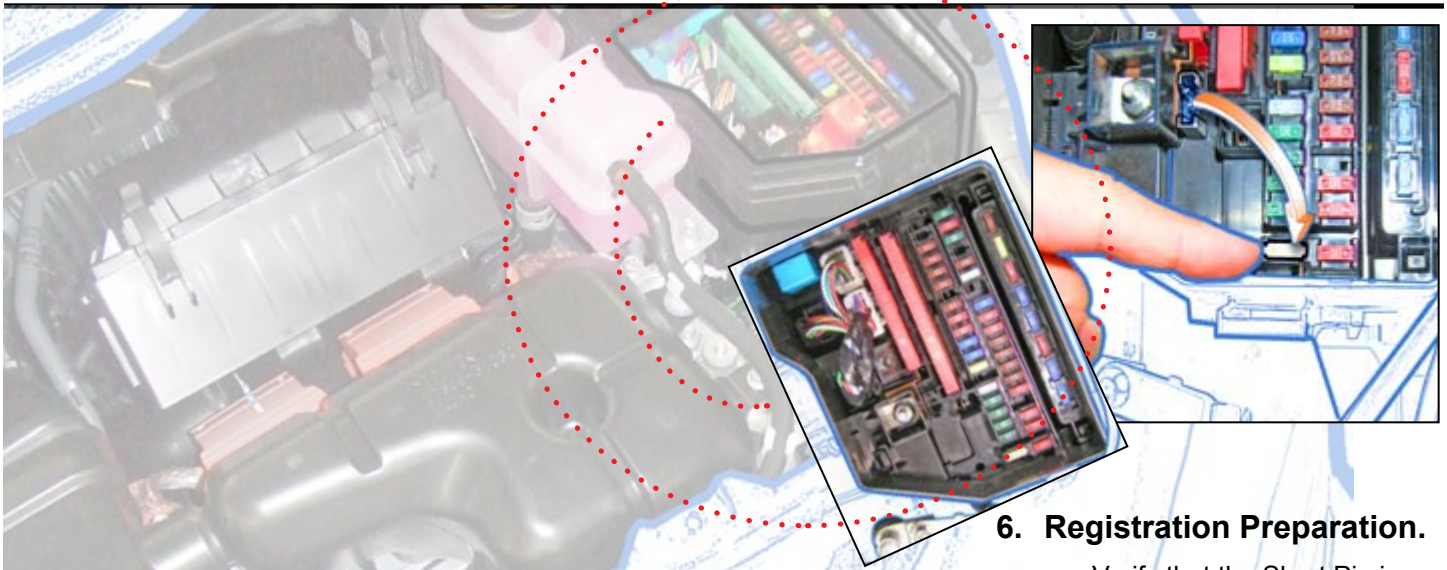
- ai. Secure both Antenna Wires to the Vehicle's I/P Reinforcement with 1 Wire tie.
- aj. Bundle up the excess Antenna Wires and use electrical tape to secure them together.



NOTE: Make sure the Bundle is less than 200mm in length.



- ak. Secure the Bundled Antenna Wires to the Vehicle Harness using 2 Wire Ties.



6. Registration Preparation.

- a. Verify that the Short Pin is Installed.
 - If not Install now.
- b. Partially reassemble the Vehicle except for parts indicated on Fig. 6-1.



NOTE: When reinstalling Knee Airbag, make sure to tighten the Bolts to 88.5 in•lbf (10 N•m).



VERIFY: That all Connectors are connected and Clamp reattached.



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



Fig. 6-1

7. Registration

- a. Open the Hood.
 - b. Temporarily reconnect the Negative Battery Terminal located in the Luggage area.
- +** **CAUTION:** Do not touch the Positive Terminal.
- c. Place the Vehicle in Park (P) position.

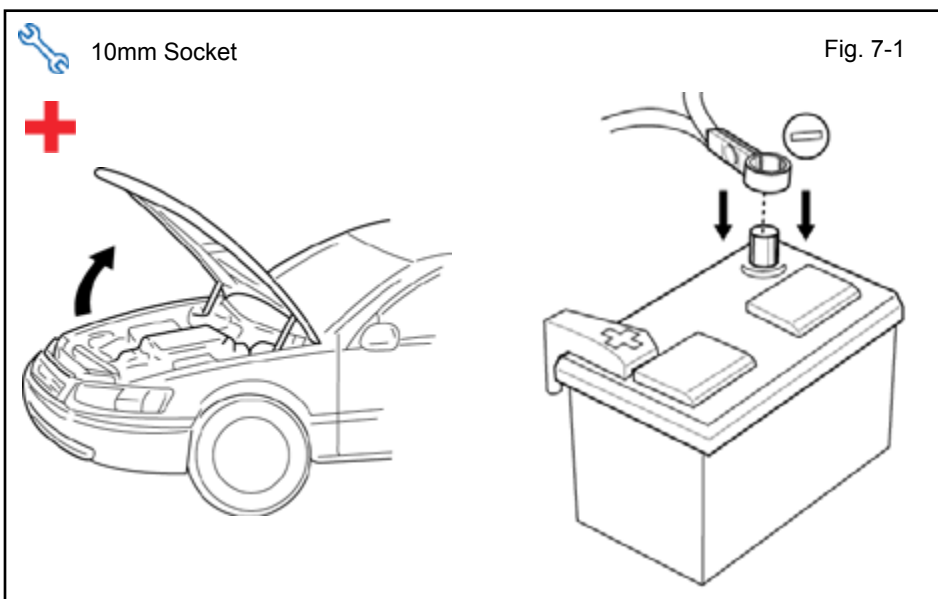


Fig. 7-1

- d. Locate the 1P RES Diagnostic Connectors in the PS Cowl Area, and remove the tape securing it.

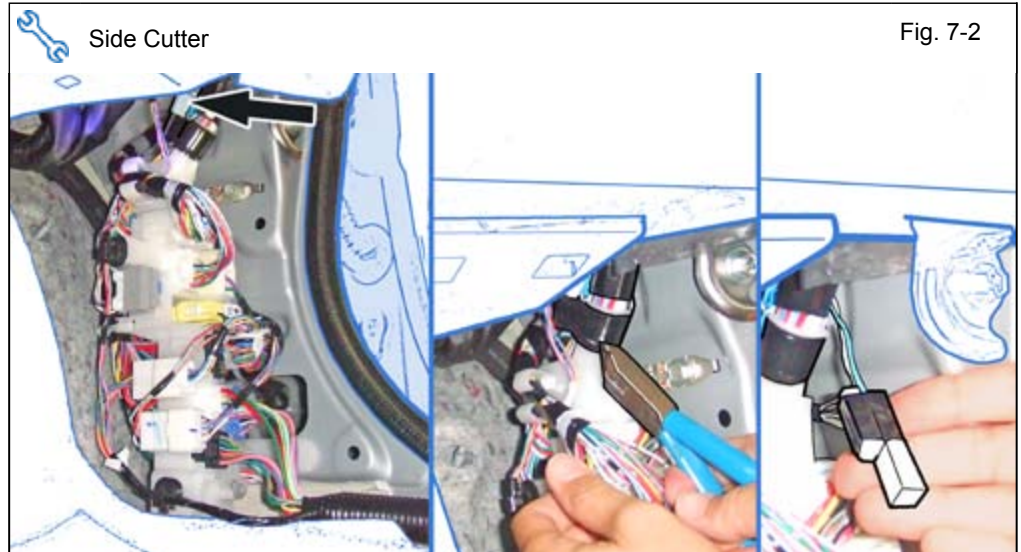


Fig. 7-2

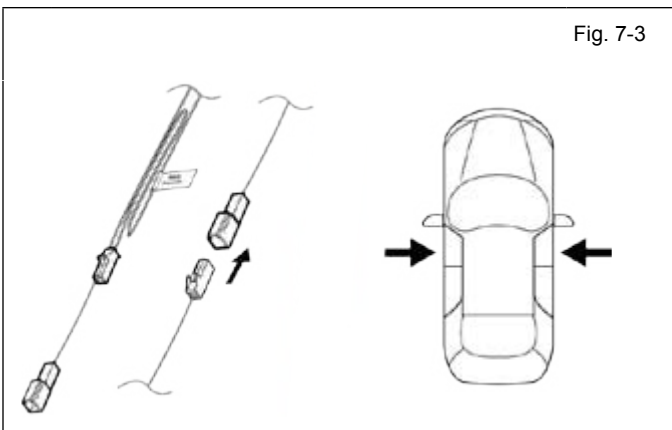


Fig. 7-3

- e. Connect the 2 RES Diagnostic Connectors.

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

- f. Close all doors.

- g. With the Remote Control Key in your possession, cycle the Start Button from OFF to ON 5 times.

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

LOOK: For the Hazard Lights to flash Once

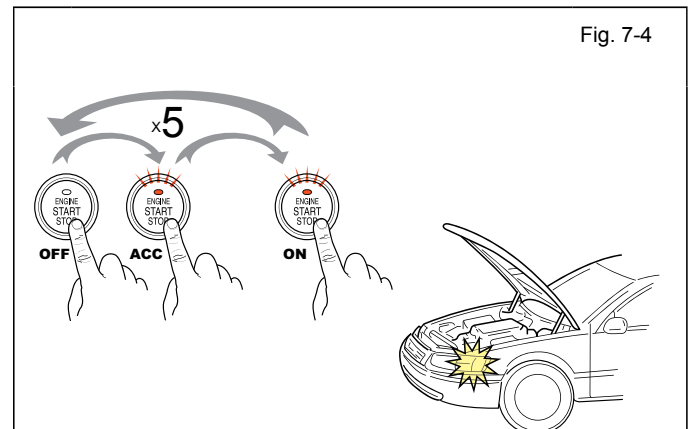


Fig. 7-4

- 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 won't flash or flashe Twice.

- Disconnect the 1P RES Diagnostic Connectors.
- Start again from step e.

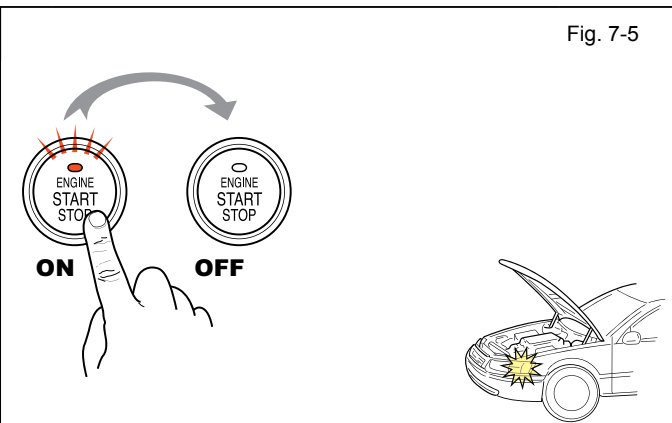
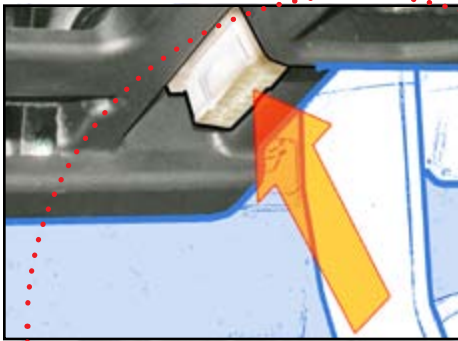
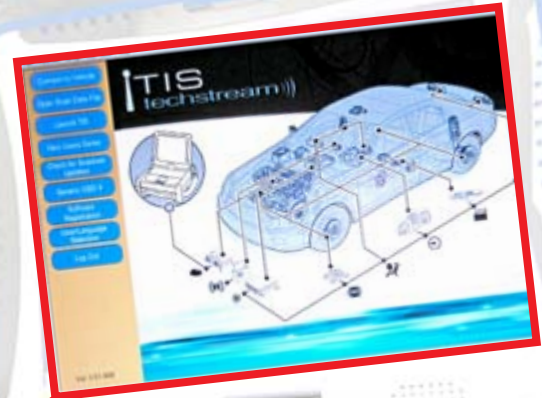


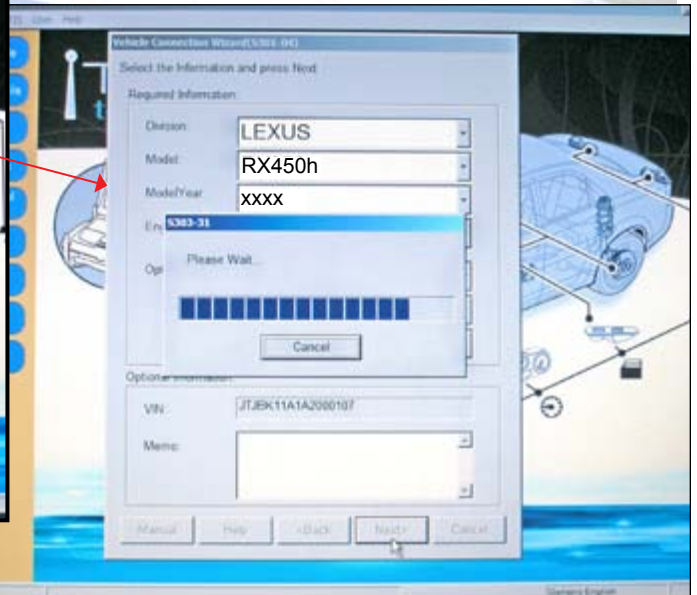
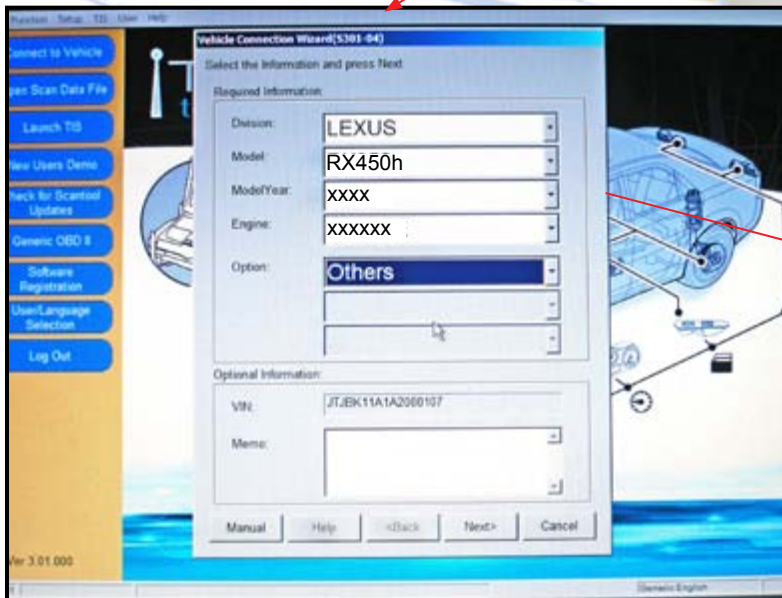
Fig. 7-5

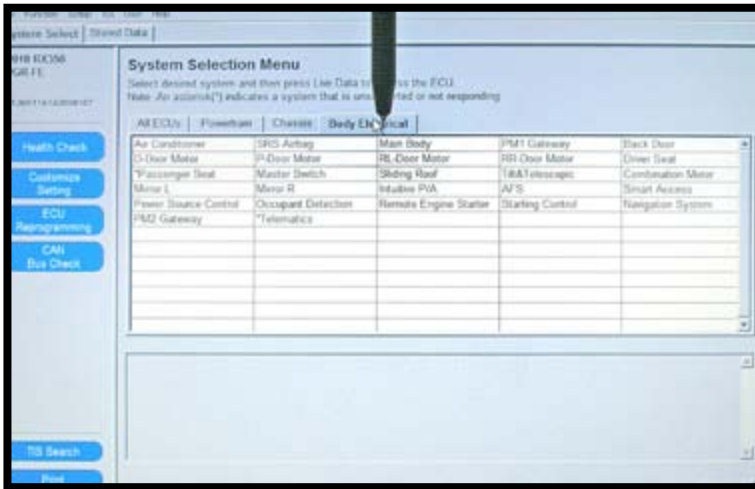


- j. Connect the Techstream Notebook to the Vehicle's Diagnostic Port.
- k. With the Smart Key in your possession, press the Power Button twice to select Ignition "ON" position.

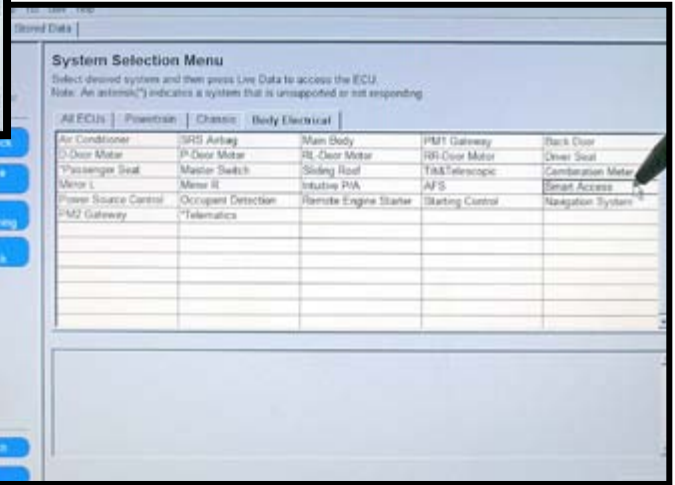


- l. Start the TIS Techstream Application by clicking on the shortcut located on the Desktop.
- m. Click "Connect to Vehicle."
- n. Confirm that the information displayed on the Vehicle Connection Wizard is correct for the Vehicle. If not verify that the Techstream is properly connected.
- o. Click "Next>."

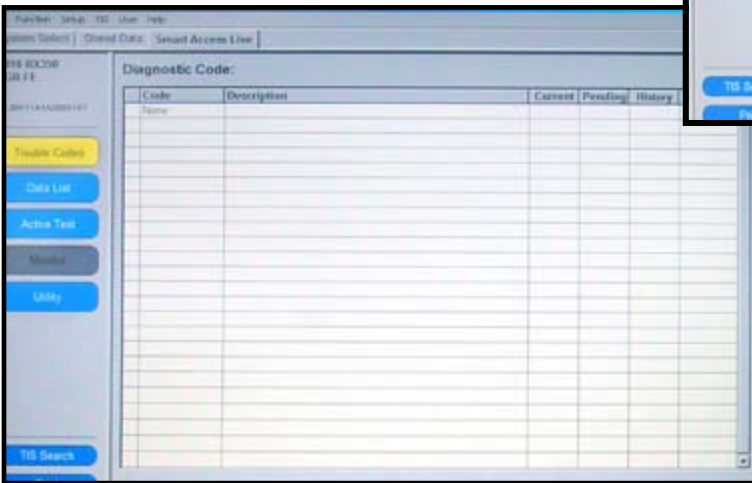




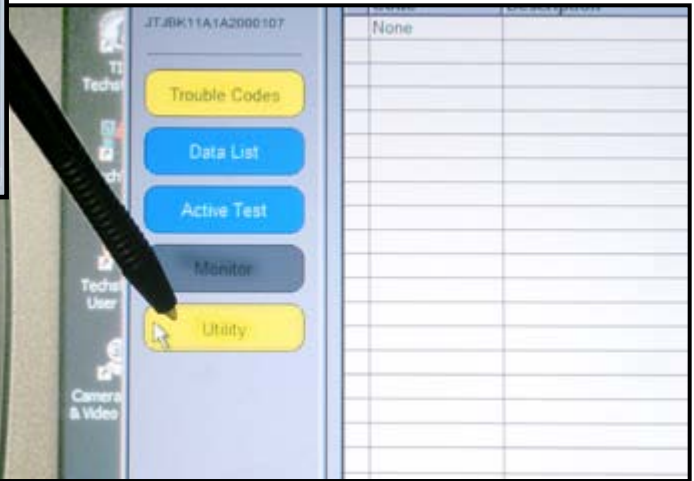
p. Click on "Body Electrical" Tab.



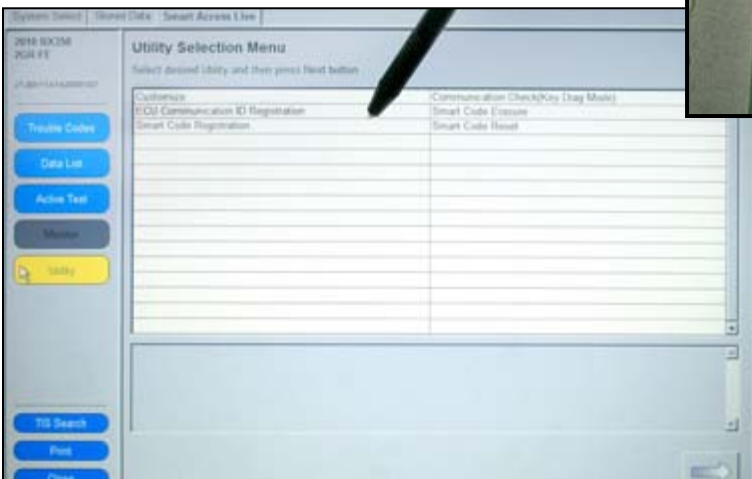
q. Click on "Smart Access."




r. This Screen shows up.

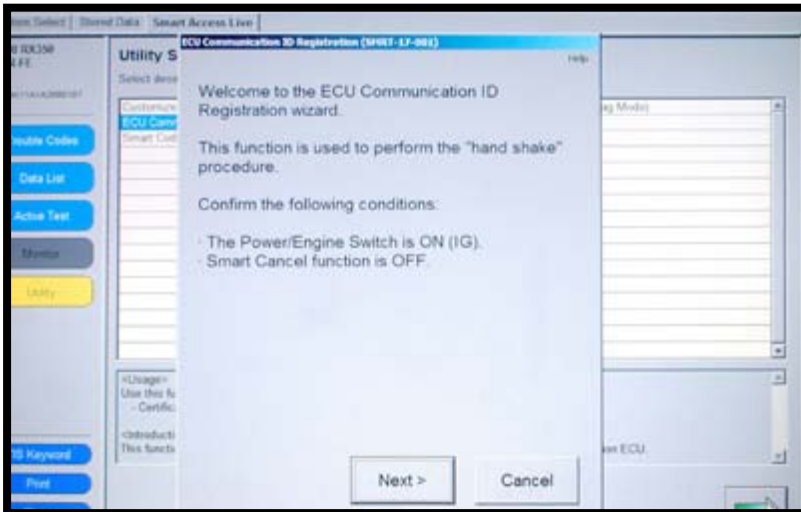


s. Click on "Utility."

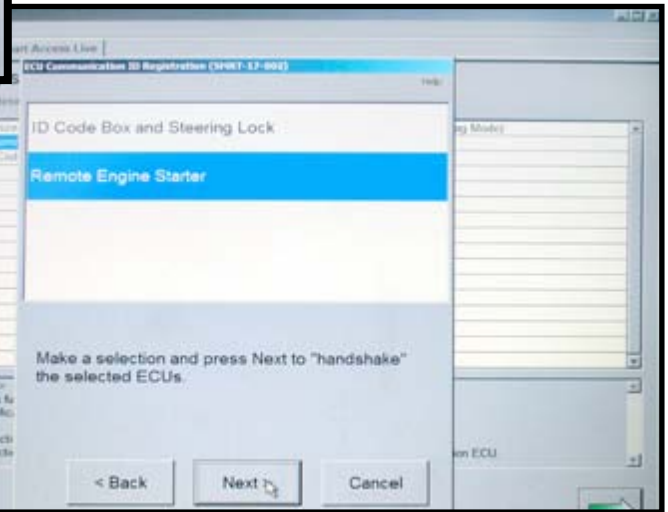


t. Select "ECU Communication ID Registration."

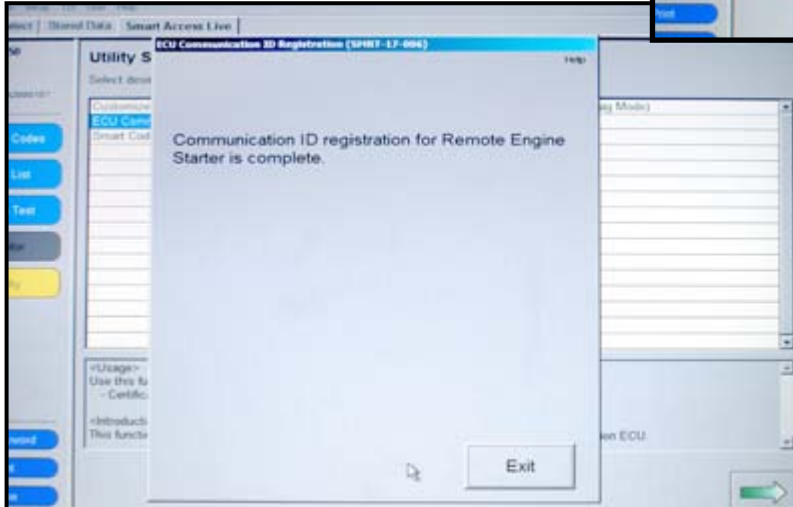
u. Click on .



v. Click on "Next>."



w. Select "Remote Engine Starter."
x. Click "Next>."



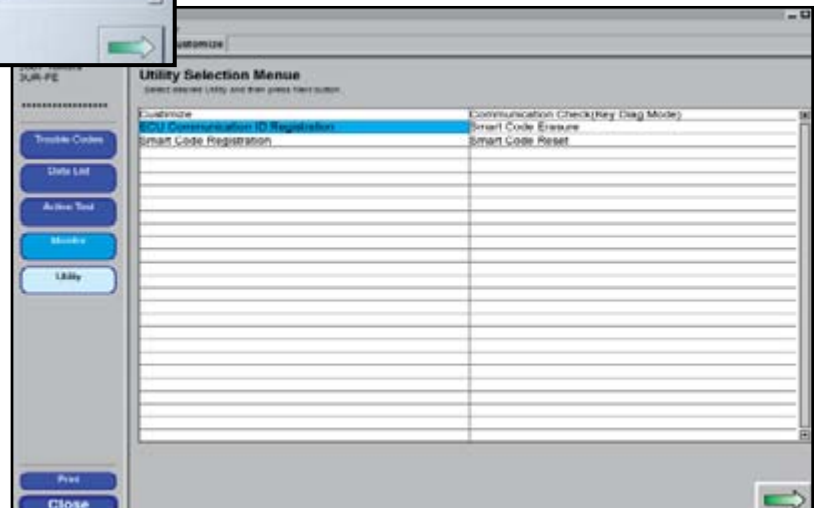
CONFIRM: That the ECU Communication ID was completed successfully.

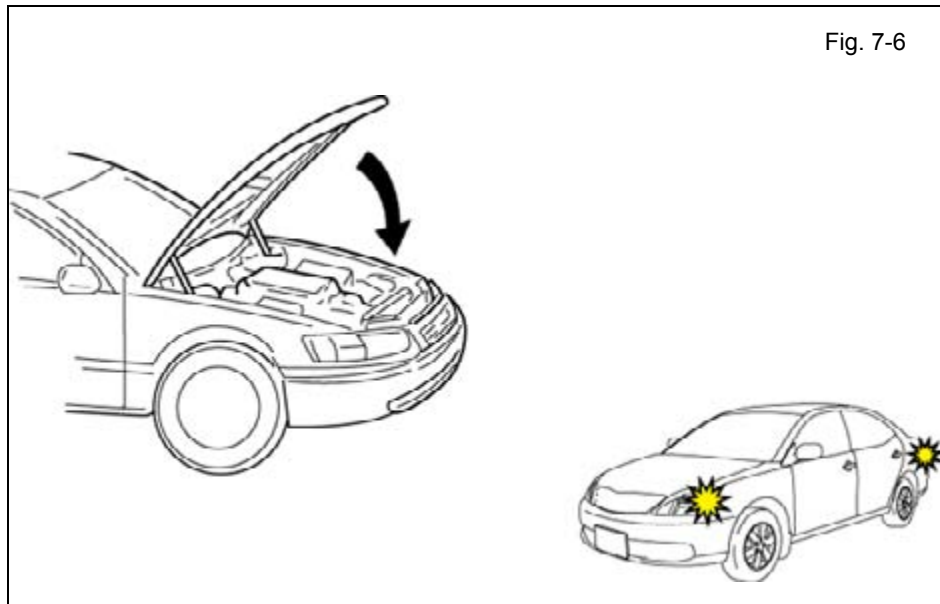
y. Click "Exit."

IF THIS PROCEDURE FAILED

- Start again from step n.

z. Click 





aa. Exit the vehicle, then Close the Hood.



LOOK: For the number of times the Hazard Lights flash

ab. The Hazard Lights flash twice, registration completed.

IF THIS PROCEDURE FAILED

If the Hazard Lights flash 3 Times.

- Disconnect the 1P RES Diagnostic connector and start again from step e.

If the Hazard Lights flash 4 Times.

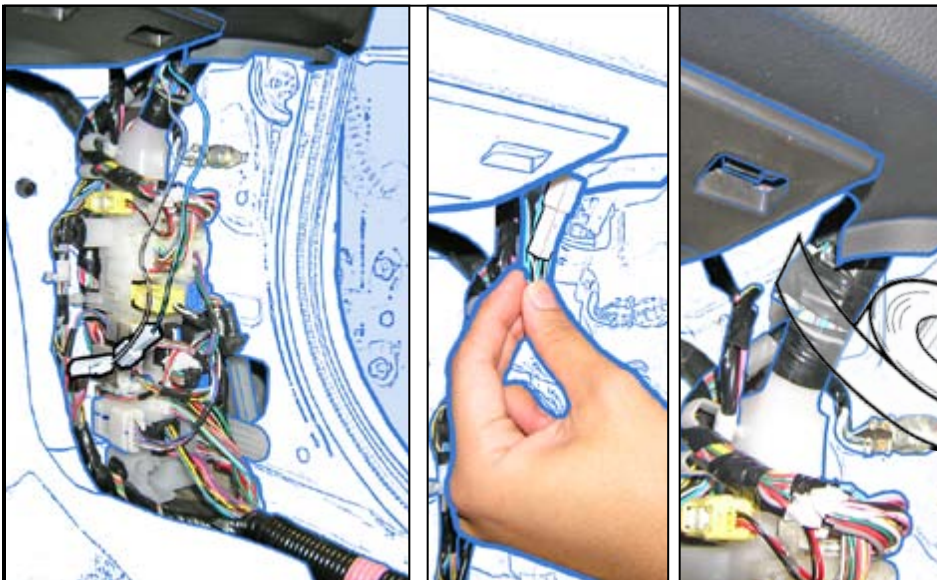
- Check connection between GPS Antenna and RES+ ECU.
- Disconnect the 1P RES Diagnostic connector and start again from step e.

If the Hazard Lights flash 5 Times.

- Move vehicle to an area with good cellular reception.
- Disconnect the 1P RES Diagnostic connector and start again from step e.

If the Hazard Lights flash 6 Times.

- Check connection between GSM Antenna and RES+ ECU.
- Disconnect the 1P RES Diagnostic connector and start again from step e.



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

ad. Using Electrical Tape secure the 1P RES Connectors to the Vehicle Harness.

ae. Reinstall the Passenger's side Cowl and Step Covers.



Fig. 8-1

8. Tags and Labels

- a. Using VDC approved cleaner and cleaning method, clean the area indicated on the underside of the Hood.
- b. Attach the Engine Room Warning Label as shown.



CAUTION: Do not touch the adhesive surface.

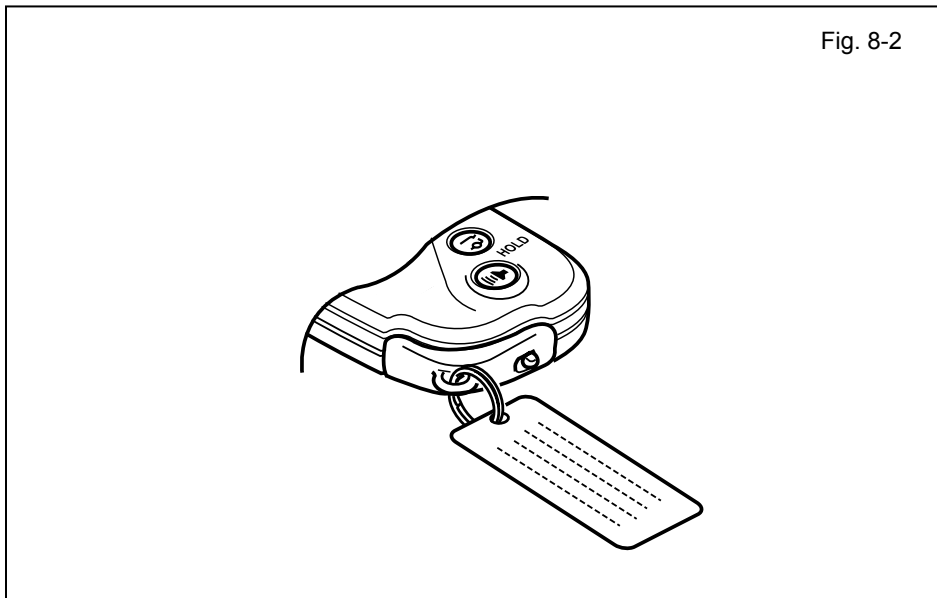


Fig. 8-2

- c. Attach the Key Tag.

REPEAT: step c with the other Smart Key.

- d. Attach the RES+ Key Tag with serial number to the Large Key Ring.

- e. Use Household Glass Cleaner to clean the inside of the Front Door Window.
- f. Use a piece of Clear Tape to lift the Label from the protective backing.



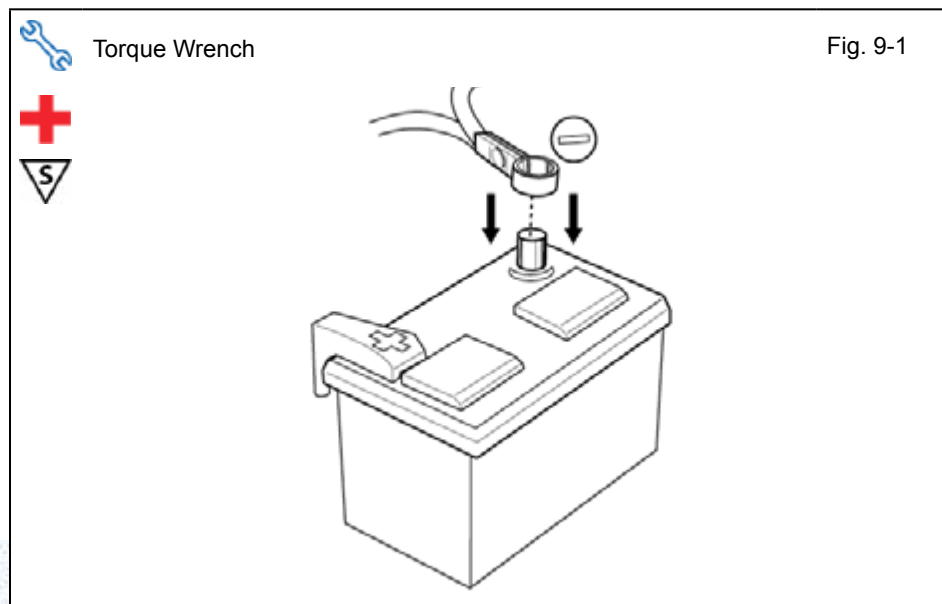
CAUTION: Do not touch the adhesive surface.

- g. Attach the Label as shown.



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

REPEAT: steps e–g with the other Front Door Window.



9. Complete the Installation.

- a. Position the Negative Battery Cable at the original factory position and torque the nut.

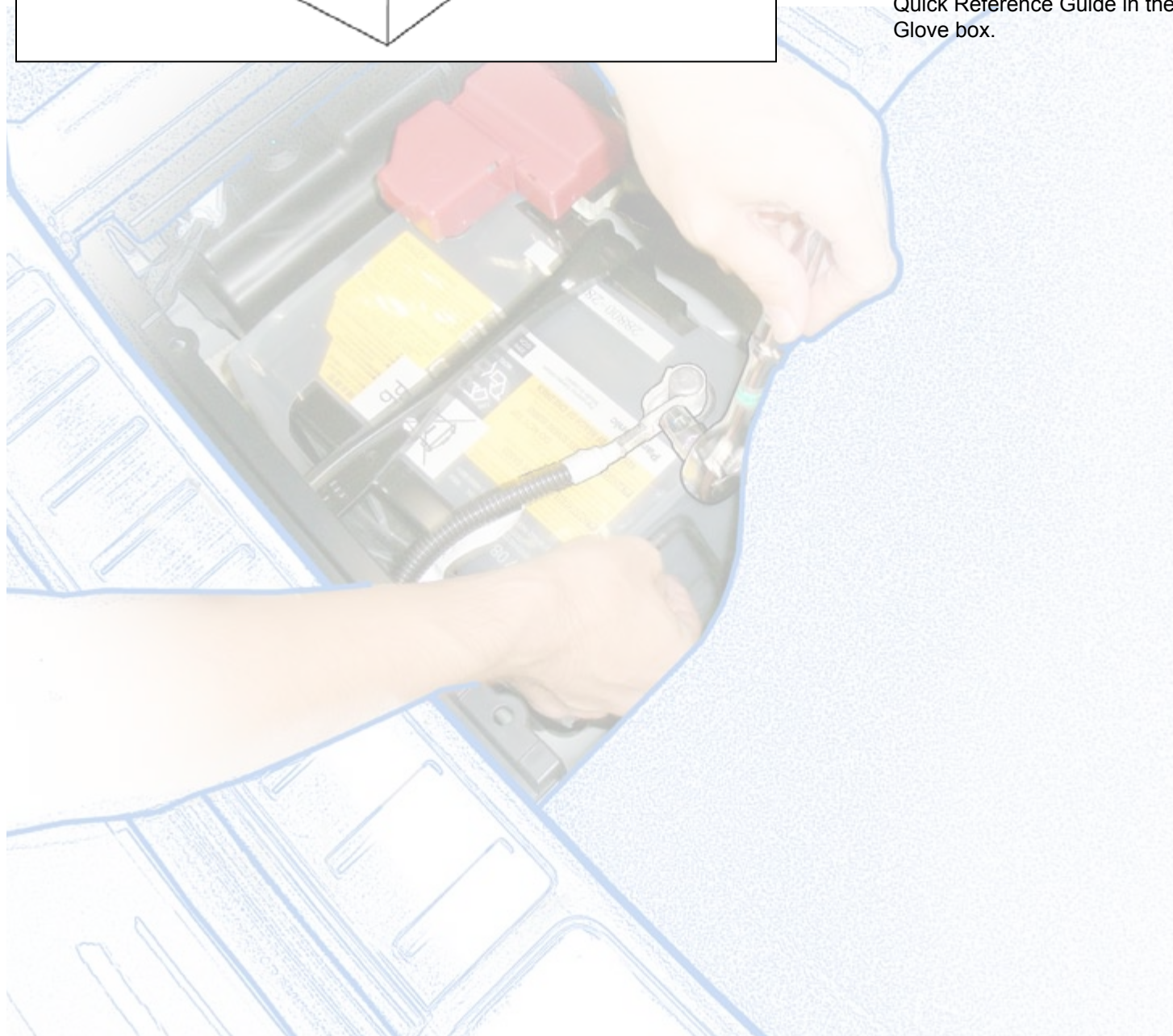


Torque: 5.4 N•m (48 in•lbf)



CAUTION: Do not touch the Positive Battery Terminal.

- b. Clean up and Remove trash.
- c. Reinstall the Battery cover and Spare tire cover.
- d. Sealed in its protective bag, place the Owner's Guide and Quick Reference Guide in the Glove box.



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: <i>Wait 30 seconds before pulling the hood release handle for the Security Alarm to trigger.</i>	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
<input type="checkbox"/>	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
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Enter the Vehicle

<input type="checkbox"/> Dome/Courtesy Lights	<input type="checkbox"/> Horn
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Start the Vehicle

<input type="checkbox"/> Gauges	<input type="checkbox"/> Panel / Switch Illumination
<input type="checkbox"/> Check Engine Light <i>If the warning light remains on, it may indicate a system malfunction.</i> 	<input type="checkbox"/> ABS Light (if equipped) <i>If the warning light remains on, it may indicate a system malfunction.</i> 
<input type="checkbox"/> Lamp Failure Sensor <i>If the warning light remains on, it may indicate a system malfunction.</i> 	<input type="checkbox"/> Track/Skid Control Light (if equipped) <i>If the warning light remains on, it may indicate a system malfunction.</i> 
<input type="checkbox"/> Seat Belt Warning Light <i>If the warning light remains on, it may indicate a system malfunction.</i> 	<input type="checkbox"/> Tire Pressure Monitoring System (TPMS) <i>Prior to TPMS activation and Pre-delivery Service (PDS) of the Vehicle the TPMS light will blink when IG is turned on.</i> <i>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.</i> 
<input type="checkbox"/> Air Bag Warning Light <i>If the warning light remains on, it may indicate a system malfunction.</i> 	
<input type="checkbox"/> Cruise Control Light (if equipped) 	

Using a Mirror or Assistant check the following.

<input type="checkbox"/> Trunk/Tailgate/Bed Lights (if equipped)	<input type="checkbox"/> Tail Lights
<input type="checkbox"/> Brake Lights	<input type="checkbox"/> Daytime Running Lights (if equipped)
<input type="checkbox"/> Backup Lights	<input type="checkbox"/> Marker Lights
<input type="checkbox"/> Clearance Sonar (if equipped)	

Stop the Engine, Place the Vehicle's IG in the ON position.

<input type="checkbox"/> Hazard Lights	<input type="checkbox"/> Turn Signal Lights
<input type="checkbox"/> Head Lights	<input type="checkbox"/> Fog Lights (if equipped)
<input type="checkbox"/> High Beams	<input type="checkbox"/> Accessory Controls/Illumination (if equipped)
<input type="checkbox"/> Power Side Mirrors (if equipped)	<input type="checkbox"/> Convenience Memory Settings (if equipped)
<input type="checkbox"/> Power Sliding Door (if equipped)	<input type="checkbox"/> Rear Sunshade (if equipped)

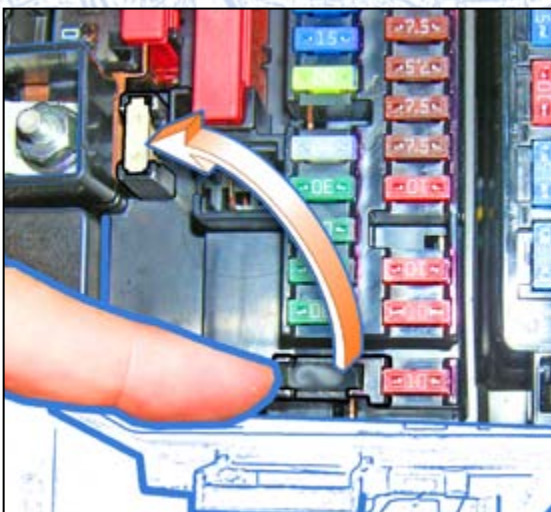
Function		Function	
<input type="checkbox"/>	Front Wiper/Washer	<input type="checkbox"/>	Rear Wiper/Washer (if equipped)
<input type="checkbox"/>	Power Sun/Moon Roof (if equipped)	<input type="checkbox"/>	Rollover Side Curtain Air Bag Switch (RSCA) (if equipped)
<input type="checkbox"/>	Clock (if equipped)	<input type="checkbox"/>	Navigation System (if equipped)
<input type="checkbox"/>	Audio/Video (if equipped)	<input type="checkbox"/>	HVAC
<input type="checkbox"/>	Steering Wheel Audio Control (if equipped)	<input type="checkbox"/>	Rear Window Defogger (if equipped)
<input type="checkbox"/>	Front Windshield Defogger (if equipped)	<input type="checkbox"/>	Accessory Power Socket (if equipped)
<input type="checkbox"/>	Side Mirror Defogger (if equipped)	<input type="checkbox"/>	Heated/Vented Seats (if equipped)
<input type="checkbox"/>	Massage Seats (if equipped)	<input type="checkbox"/>	Passenger Air Bag Switch (if equipped)

<input type="checkbox"/>	Glove Box Light (if equipped)	<input type="checkbox"/>	Passenger Foot Lamp
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<input type="checkbox"/>	Power Locks (if equipped)	<input type="checkbox"/>	Power Windows (if equipped)
<input type="checkbox"/>	Power Seats (if equipped)	<input type="checkbox"/>	Key Sensor Buzzer

Remove the short pin after Function check.

Check with your Port/Dealer to see if this step is necessary.



Finish reassembling the Vehicle.



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

