

Part Number: PT725-48140

Kit Contents:

Item #	Quantity Req'd.	Description
1	1	Converter
2	1	Flat 4-pin wire harness
3	1	Interior wire harness
4	7	Plastic tie
5	4	Foam tape
6	2	Bolt (M5)
7	2	Nut (M5)
8	1	Fuse (30A) (in hardware bag)
9	1	Owner's manual

Hardware Bag Contents

Item #	Quantity Req'd.	Description

Additional Items

(may be required)

Item #	Quantity Req'd.	Description

Recommended Sequence of Application

Item #	Quantity Req'd.	Description

Vehicle Service Parts

Item #	Quantity Req'd.	Description

General Applicability

Vehicle body must be above 65° F to apply the adhesive on the converter to the body panel.

Recommended Sequence of Application

Item #	Description
1	Trailer Hitch
2	Trailer Wire Harness

Recommended Tools

Personal & Vehicle Protection	Notes
Safety Glasses	
Seat Protectors	
Special Tools	Notes
LED Tester - 4-pin	SST 00002-62195
Installation Tools	
Torque Wrench	100 lbf·in
8 mm wrench	
Ratchet 3/8" Drive	
6" Extension	
8 mm Socket	
10 mm Socket	
Clip Removal Tool	
Side Cutters	
Needle Nose Pliers	
Nylon Removal Tool	
Special Chemicals	
VDC Approved Cleaner	

Legend

 **STOP:** Damage to the vehicle may occur. Do not proceed until process has been complied with.

 **CAUTION:** A process that must be carefully observed in order to reduce the risk of damage to the accessory/ vehicle.

 **OPERATOR SAFETY:** Use caution to avoid risk of injury.

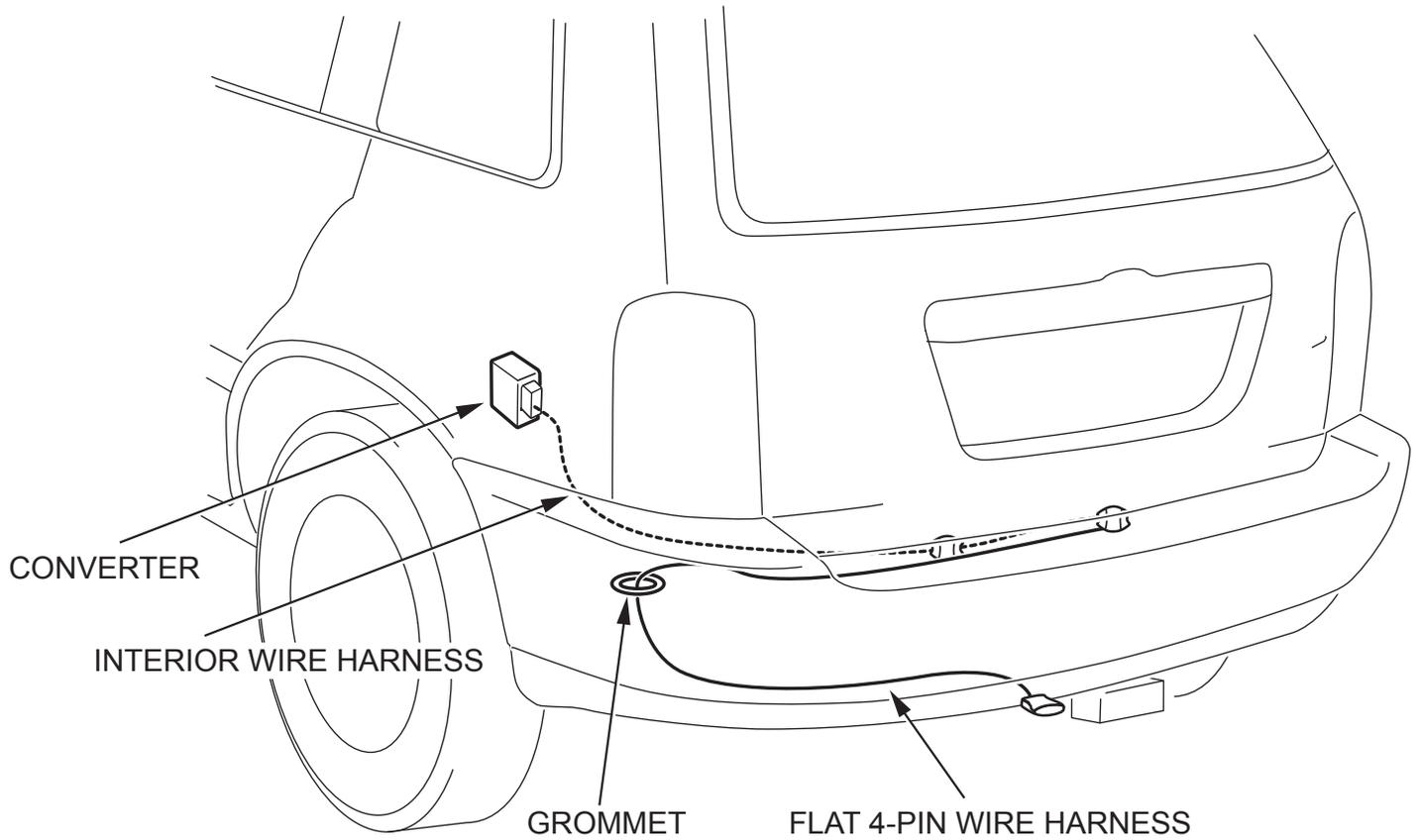
 **TOOLS & EQUIPMENT:** Used in Figures. Calls out the specific tools and equipment recommended for the process.

 **REVISION MARK:** This mark highlights a change in installation with respect to previous issue.

 **SAFETY TORQUE:** This mark indicates that torque is related to safety.

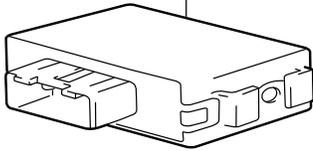
This document is the product of DENSO Products and Services America, Inc., which will not be liable for any modifications made without DENSO's written consent.

Installation Layout

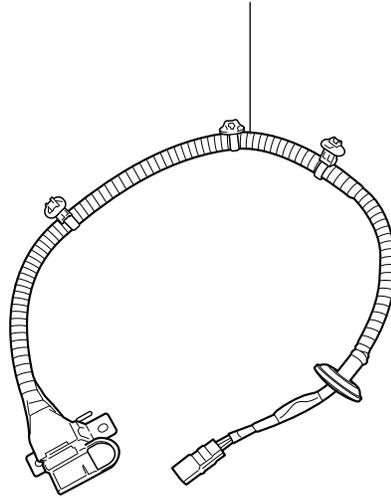


Complete Parts List

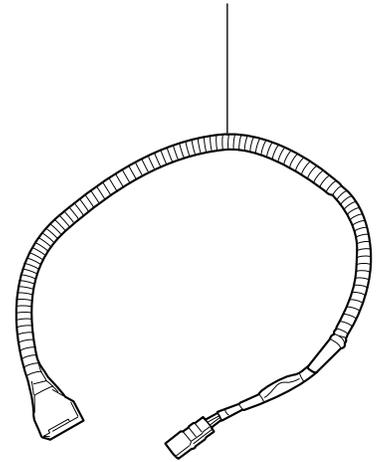
(1) CONVERTER



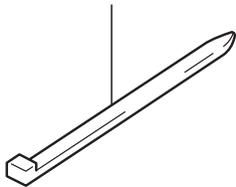
(2) FLAT 4-PIN WIRE HARNESS



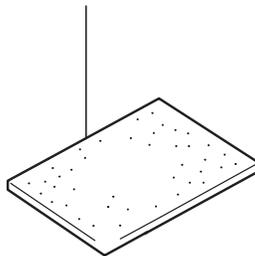
(3) INTERIOR WIRE HARNESS



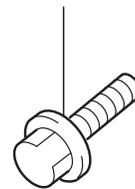
(4) PLASTIC TIE (x7)



(5) FOAM TAPE (x4)



(6) BOLT (M5) (x2)



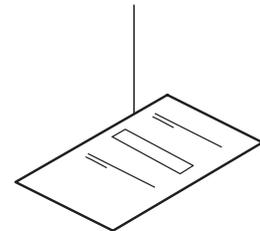
(7) NUT (M5) (x2)



(8) FUSE (30A)



(9) OWNER'S MANUAL



Accessory Installation Practices (read before installation)

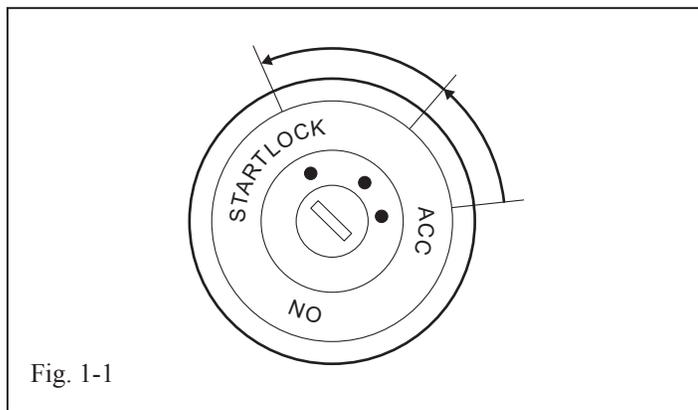
Care must be taken when installing this accessory to ensure damage does not occur to the vehicle. The installation of this accessory should follow approved guidelines to ensure a quality installation.

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

This document covers such items as:

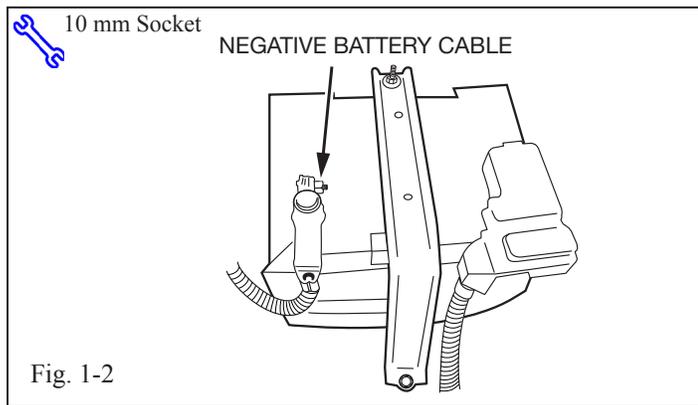
- Vehicle Protection (use of covers and blankets, cleaning chemicals, etc.)
- Safety (eye protection, checking torque procedure, etc.)
- Vehicle Disassembly/Reassembly (panel removal, part storage, etc.)
- Electrical Component Disassembly/Reassembly (battery disconnection, connector removal, etc.)

Please see your Toyota/Scion/Lexus dealer for a copy of this document.



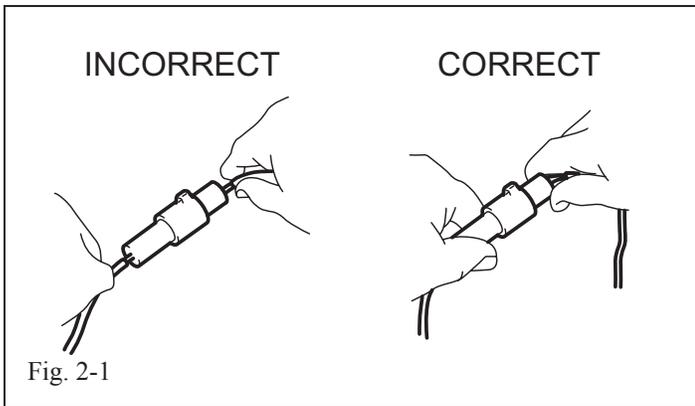
1. Supplemental Restraint System (SRS)

- STOP** (a) Failure to carry out procedures listed below could result in possible deployment of airbag, personal injury, or unnecessary repair to SRS.
- (b) Turn the key switch to the LOCK position (Fig. 1-1).
- (c) Remove the key from the ignition switch.
- (d) Disconnect the negative battery cable (Fig. 1-2).



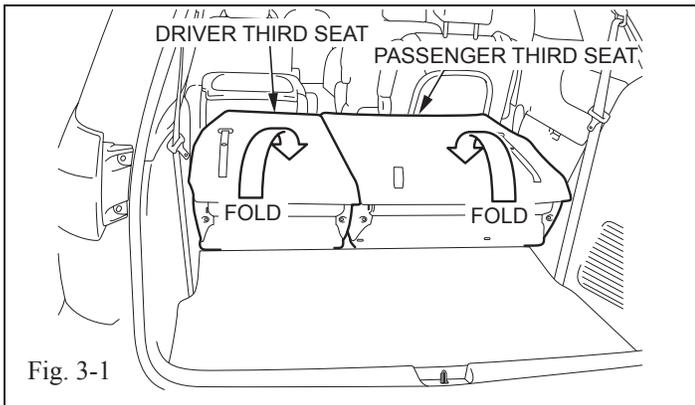
- STOP** (e) Never use a voltmeter to troubleshoot any of the harnesses or connectors to the SRS. Accidentally probing the connectors to the SRS can lead to deployment of the airbag (Fig. 1-3).
- (f) SRS wire harness loom/cover is bright yellow in color.





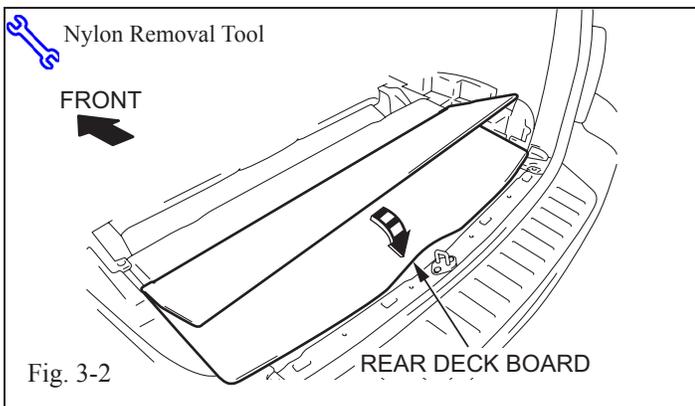
2. Wiring Precautions

- ⚠ (a) DO NOT pull on vehicle wires and/or wire harness. To uncouple electrical connectors, pull only on the connector (Fig. 2-1).
- ⚠ (b) When installing the trailer wire harness, make sure it is not cut or perforated by any sharp metal objects.

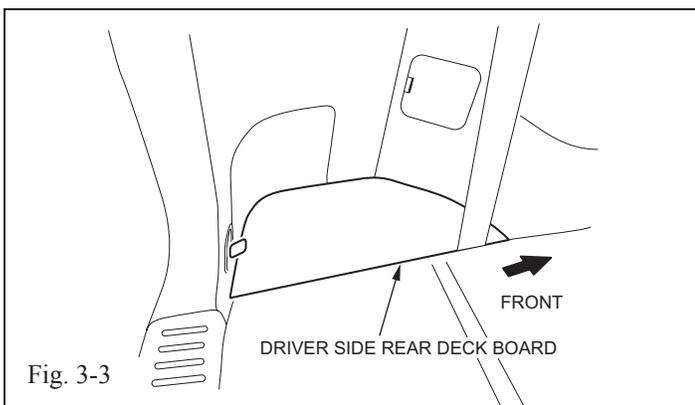


3. Interior

- (a) Fold the third row seats forward (Fig. 3-1).



- (b) Remove rear deck board (Fig. 3-2).



- (c) Remove driver side rear deck board. (Fig. 3-3).

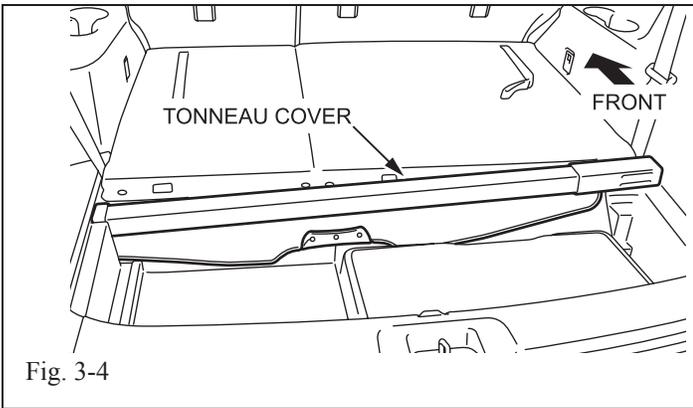


Fig. 3-4

(d) Remove Tonneau cover (if equipped) (Fig. 3-4).

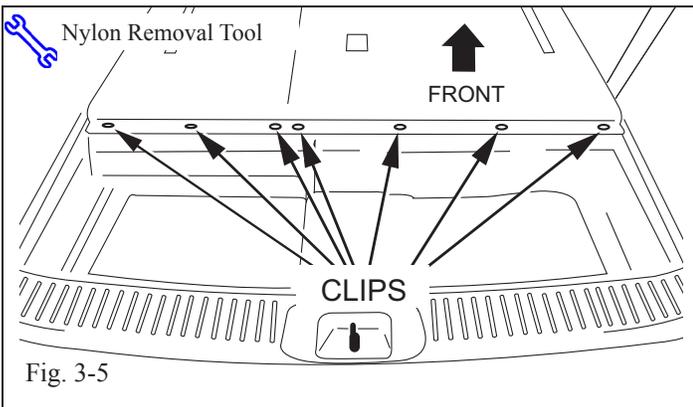


Fig. 3-5

(e) Remove the clips (Fig. 3-5).

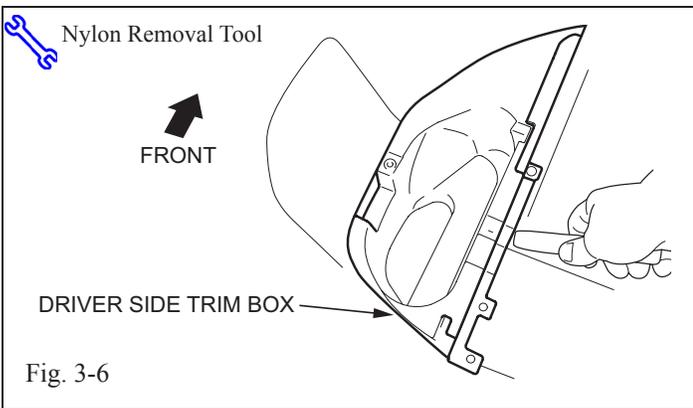


Fig. 3-6

(f) Remove driver side trim box (or battery storage cover for Hybrid) by pulling upward (Fig. 3-6).



Be careful not to scratch the interior panel when removing trim box.

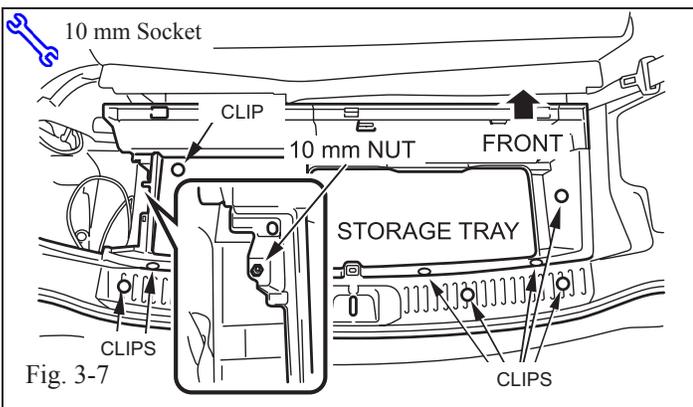
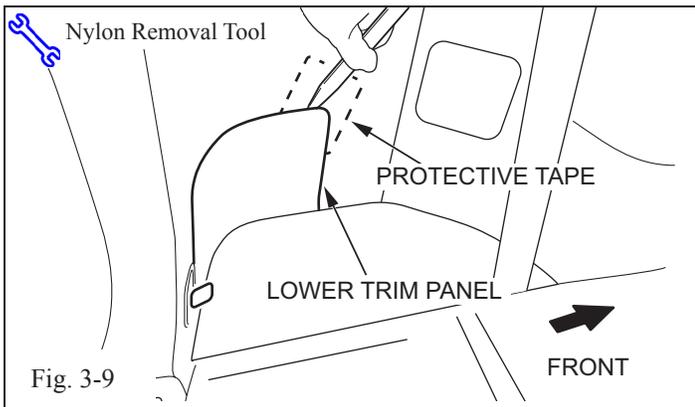


Fig. 3-7

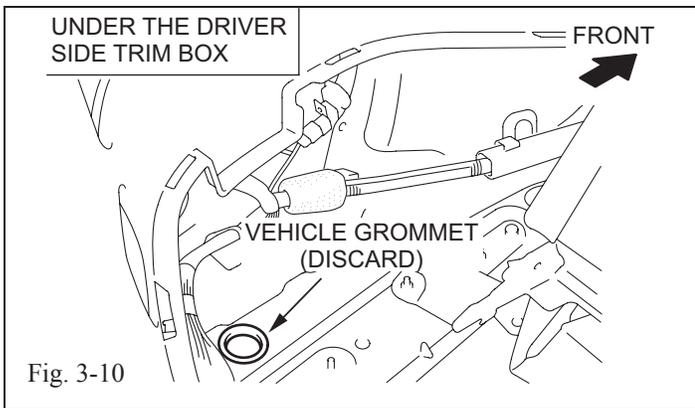
(g) Remove the 10 mm nut and remove the rear storage tray (Fig. 3-7).



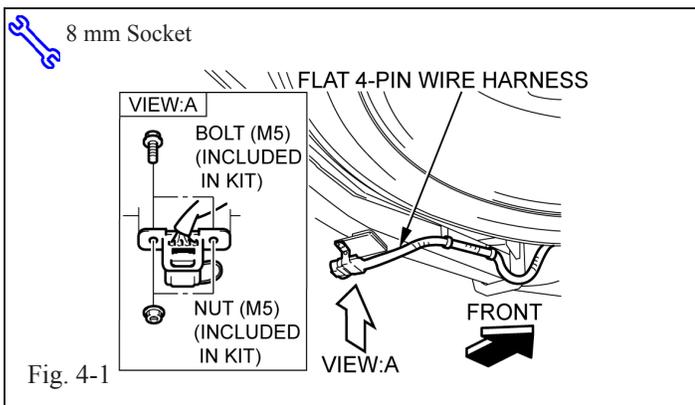
- (h) Remove the fuel release lever cover (Fig. 3-8).



- (i) Remove lower trim panel. Apply protective tape and use nylon removal tool to pull out the upper area and then lift up (Fig. 3-9).



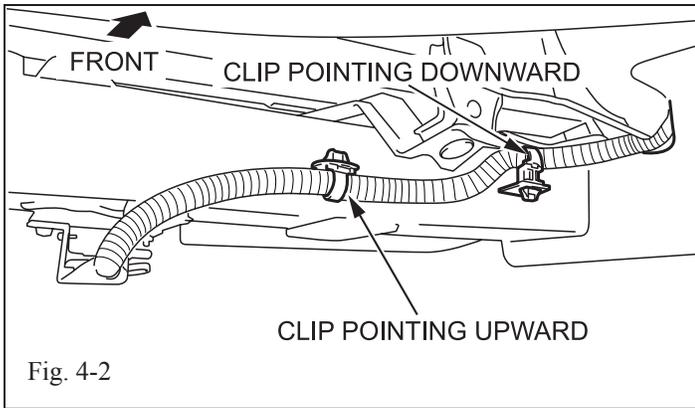
- (j) Remove the vehicle grommet and discard (Fig. 3-10).



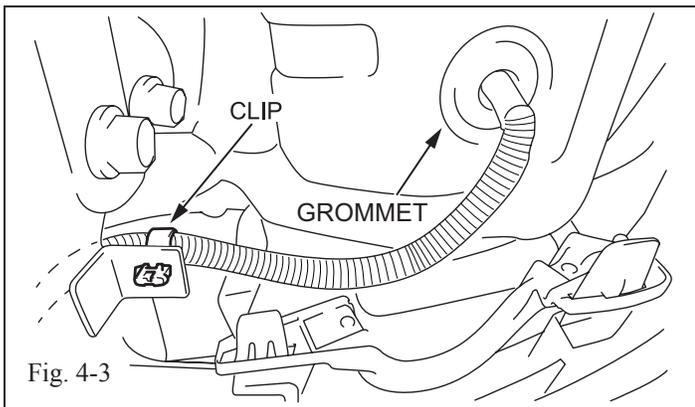
4. Flat 4-pin wire harness installation

- (a) Secure the flat 4-pin wire harness to the trailer hitch mounting bracket using two (2) bolts (M5) and two (2) nuts (M5) (Fig. 4-1).

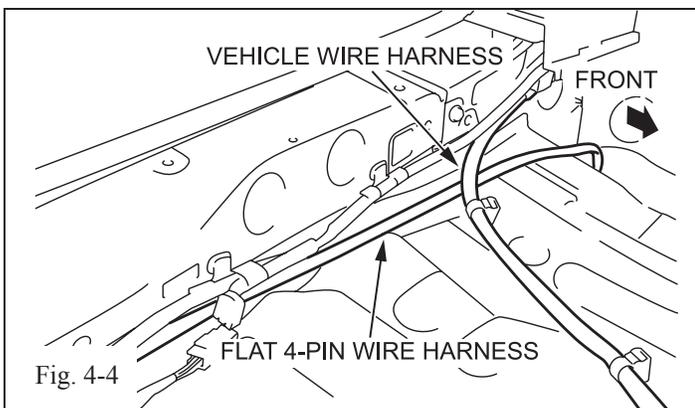
Specified tightening torque:
3.9 N·m (35 lbf·in)



- (b) Route the flat 4-pin wire harness along the trailer hitch and secure with two (2) clips to the trailer hitch as shown (Fig. 4-2).

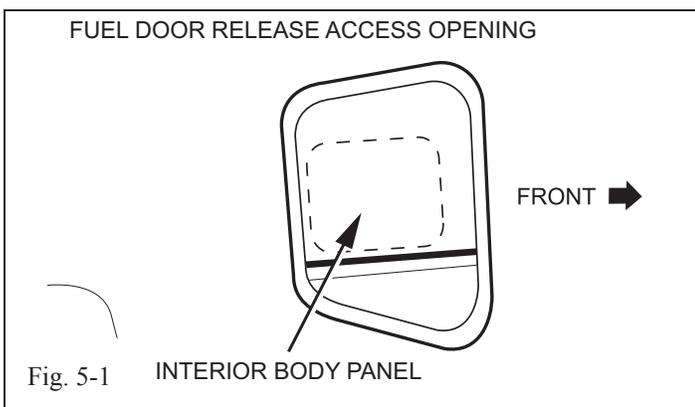


- (c) Route the square connector end of the flat 4-pin wire harness between the tow hitch and the vehicle, then pass the square connector through the grommet hole and secure the grommet (Fig. 4-3).
- (d) Secure the flat 4-pin wire harness with one (1) clip to the trailer hitch (Fig. 4-3).



- (e) Route the flat 4-pin wire harness across the rear interior of the vehicle, under the vehicle wire harness and connect it to the vehicle 4-pin square connector (Fig. 4-4).

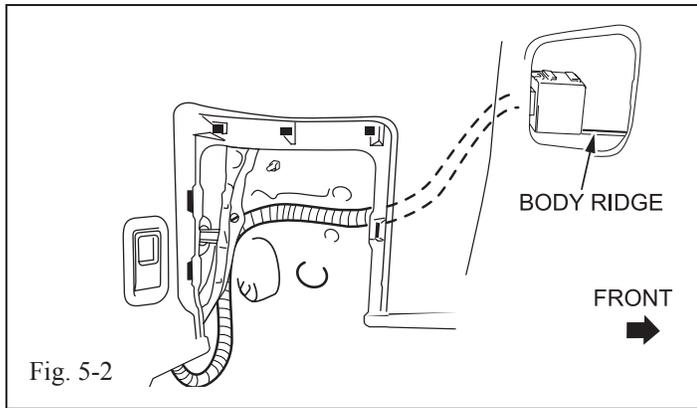
⚠ NOTE: For hybrid vehicle, route the flat 4-pin connector under the negative (-) battery cable.



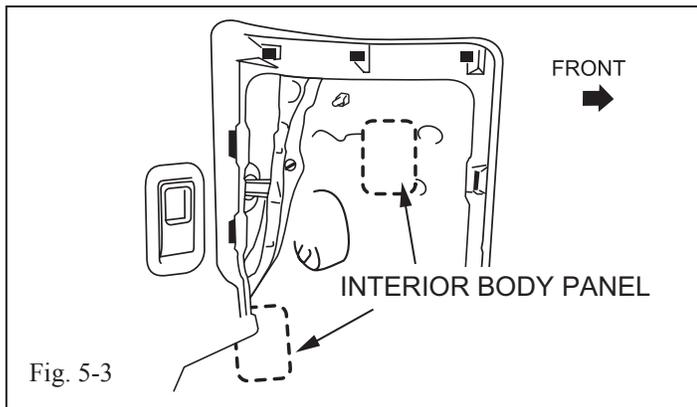
5. Installing the Converter

NOTE: Before installing the converter, make sure the interior body panel temperature is above 65° F.

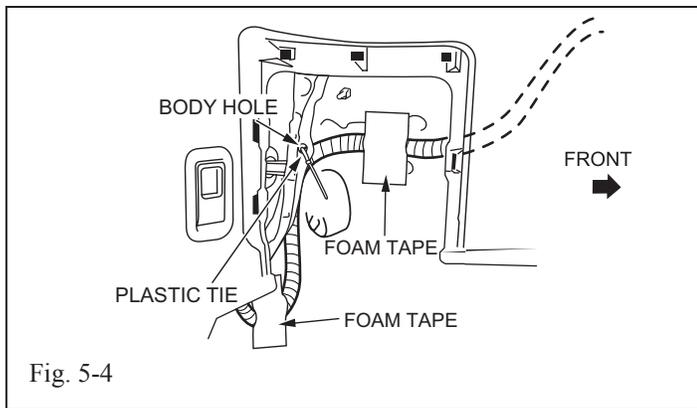
- (a) Behind the cover that was removed in Fig. 3-8, clean the interior body panel area with VDC Approved Cleaner (Fig. 5-1).



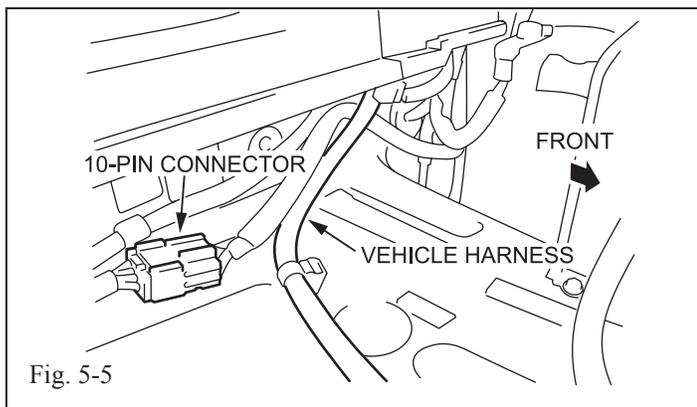
- (b) Connect the interior wire harness to the converter, route the converter and interior wire harness behind the vehicle wire harness and trim panel (Fig. 5-2).
- (c) Remove the backing from the butyl tape on the converter and attach to the body with the lower side against the body ridge (Fig. 5-2).



- (d) Clean the interior body panel area as shown with VDC Approved Cleaner (Fig. 5-3).



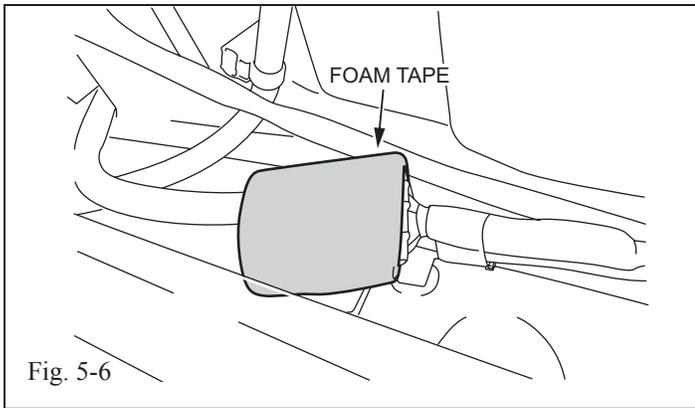
- (e) Route the interior wire harness behind body hole and secure to the hole with one (1) plastic tie (Fig. 5-4).
- (f) Secure the interior wire harness to the vehicle body using two (2) of the foam tape (Fig. 5-4).



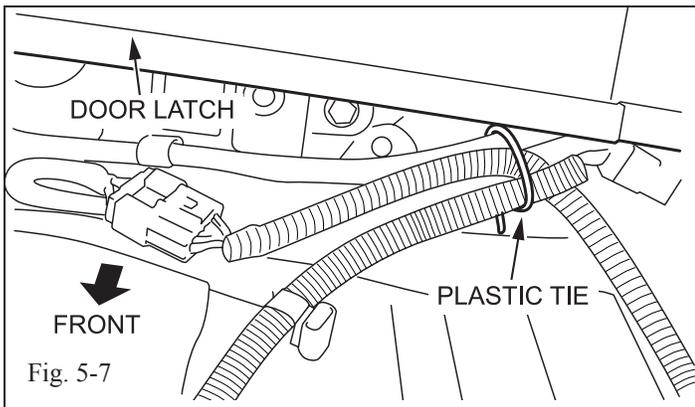
- (g) Route the interior wire harness under the vehicle harness in the vehicle rear cargo area as shown (Fig. 5-5).

⚠ NOTE: For hybrid vehicles, route the wire harness under the negative battery cable.

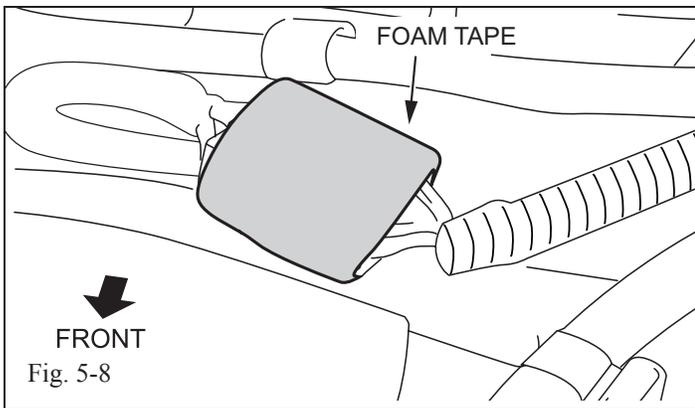
- (h) Connect the interior 10-pin wire harness connector to the vehicle harness connector (10P) (Fig. 5-5).



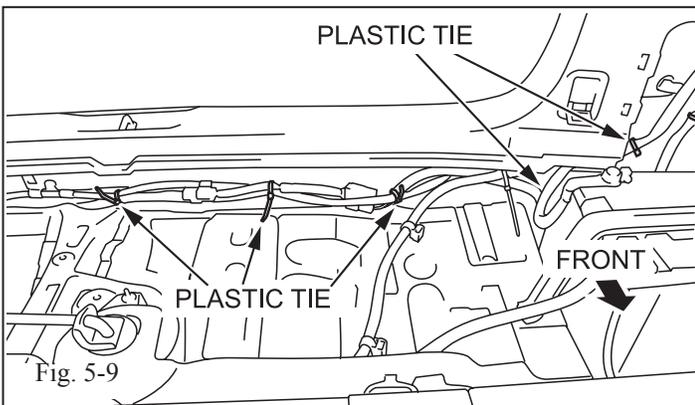
- (i) Wrap the interior 10P connector with one (1) foam tape (Fig. 5-6).



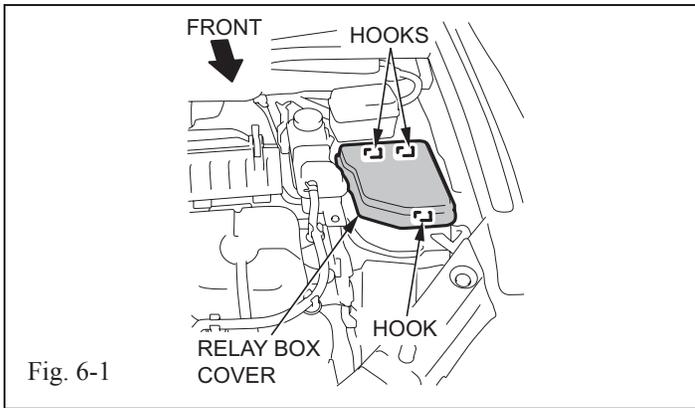
- (j) Connect the 4-pin connector. Secure the interior wire harness and flat 4-pin wire harness to the vehicle wire harness using one (1) plastic tie. Make sure there is sufficient slack in the wire harness so there is no tension on the grommet (Fig. 5-7).



- (k) Wrap the interior flat 4-pin connector with one (1) foam tape (Fig. 5-8).

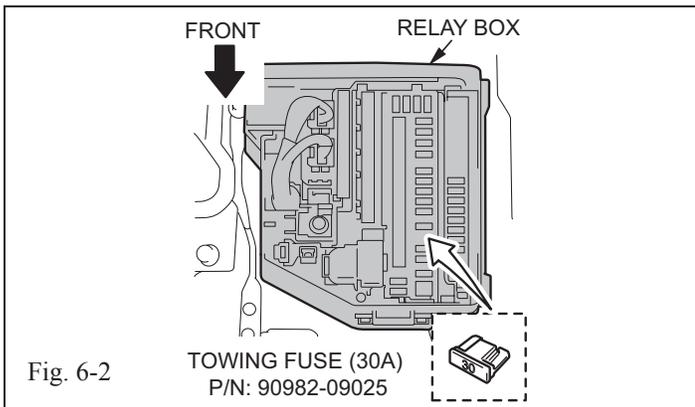


- (l) Secure the interior flat 4-pin wire harness to the vehicle wire harness using five (5) plastic ties (Fig. 5-9).

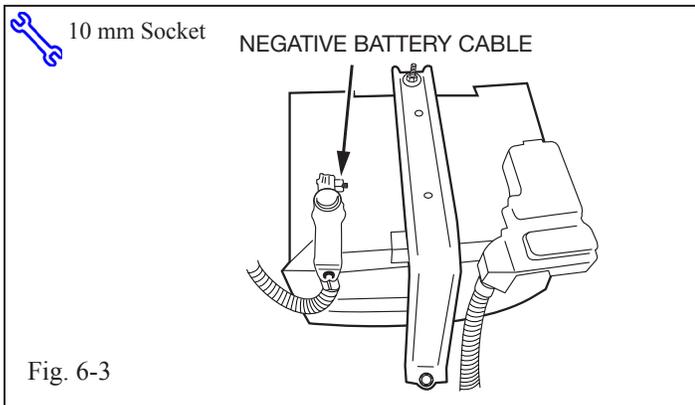


6. Installing the Fuse

- (a) Remove the relay box cover in the engine compartment (Fig. 6-1).



- (b) **For both gas and hybrid vehicles:** Install the fuse (30A) in the location as shown (Fig. 6-2).



- (c) Put the Owner's Manual into the glove box.
- (d) Reconnect the vehicle's negative battery cable to original factory orientation (Fig. 6-3).



- (1) **Torque nut to: 5.4 N·m (48 lbf·in)** (Fig. 6-3).



- (2) Be careful not to touch the positive battery cable.

- (e) Reinstallation
 - (1) Reconnect all connectors.
 - (2) Reinstall all temporarily removed parts.
- (f) Function check.
 - (1) Perform functional verification.

TOYOTA HIGHLANDER/HV 2014 - TRAILER WIRE HARNESS
Checklist – these points **MUST** be checked to ensure a quality installation.

Accessory Function Checks

Major Action Item

1	Faults in the wiring harness installation.	Correct routing of the wire harness.
2	Converter mounting.	Pushing or pulling of the converter by any outside force.
3	Wire harness.	Pinching of the wire harness.
4	Plastic tie locations.	Positioning of the plastic tie locations.
5	Negative battery cable nut torque.	Nut torque should be: 5.4 N·m (48 lbf·in)  Do not touch the positive battery terminal with any tool when replacing the cable.
6	Flat 4-pin bracket mounting bolt torque.	Bolt torque should be: 3.9 N·m (35 lbf·in)

Vehicle Function Check

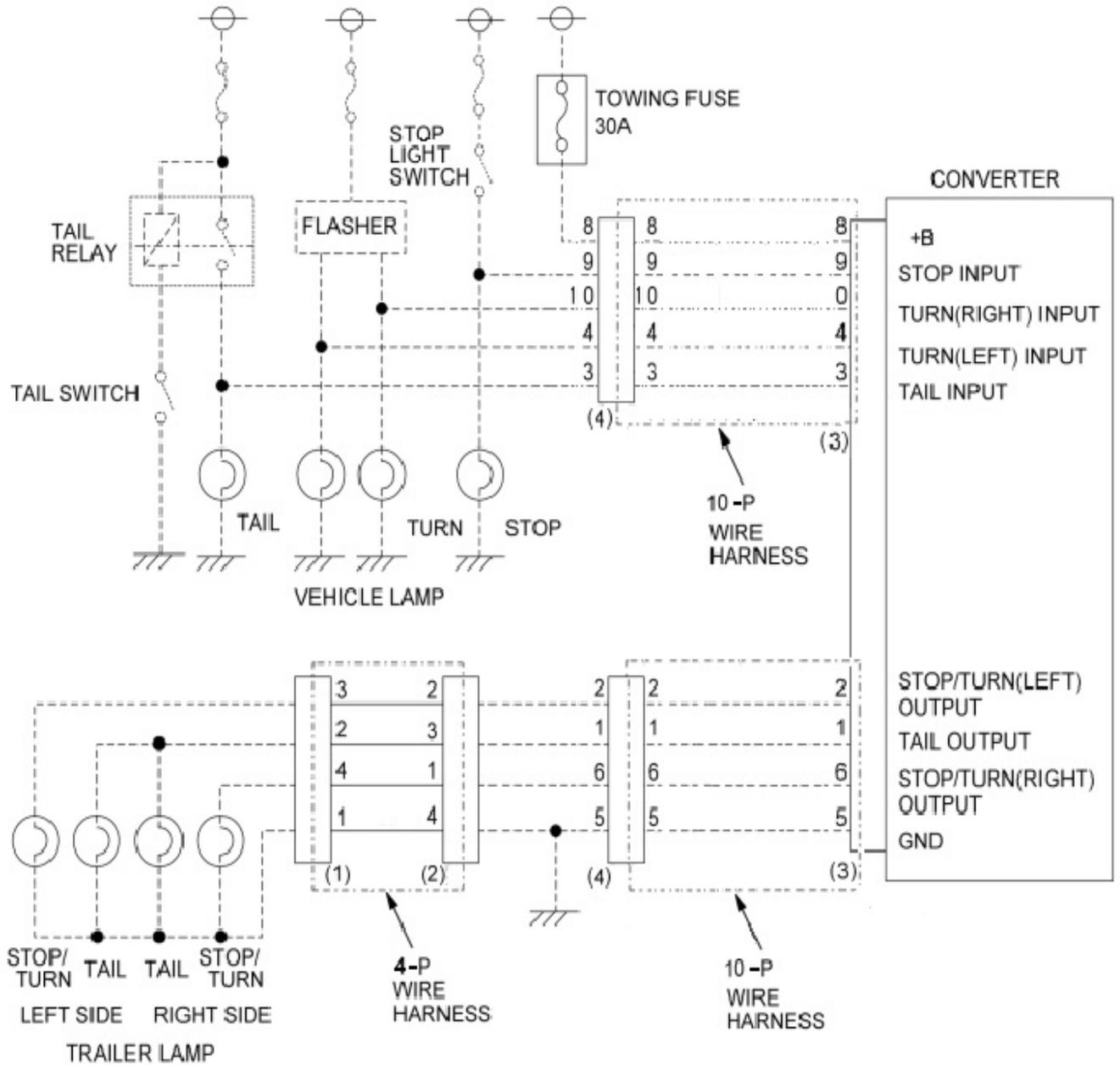
	Check:	Look For:
	<p>Connect the Special Service Tool (SST) (Part Number 00002-62195) to the trailer sub-wire harness plug.</p> <p>Perform the following steps with the engine running:</p> <p> CAUTION: Be sure the vehicle is in “Park” and that the parking brake is applied.</p> <p> CAUTION: Be sure the exhaust gas is completely ventilated.</p>	
<input type="checkbox"/>	Turn on headlamps.	Marker and tail lights on both SST and vehicle are lit.
<input type="checkbox"/>	Turn on left turn signal.	Left turn lights on both SST and vehicle are flashing.
<input type="checkbox"/>	Turn on right turn signal.	Right turn lights on both SST and vehicle are flashing.
<input type="checkbox"/>	Apply foot brake.	Stop lights on both SST and vehicle are lit.
<input type="checkbox"/>	Turn on left turn signal and apply foot brake.	Left turn lights are flashing and right stop lights are lit on both SST and vehicle.
<input type="checkbox"/>	Turn on right turn signal and apply foot brake.	Right turn lights are flashing and left stop lights are lit on both SST and vehicle.
<input type="checkbox"/>	With hazard lights switch on, apply foot brake.	All turn signal lights are flashing on both SST and vehicle.

TOYOTA HIGHLANDER/HV 2014 - TRAILER WIRE HARNESS
Checklist – these points **MUST** be checked to ensure a quality installation.

<input type="checkbox"/>	Turn off the hazard light switch, apply foot brake.	Both turn/stop lights on the SST and the stop lights on the vehicle are lit.
	Install the short pin, then perform the following checks with the ignition switch off and the engine stopped.  CAUTION: Do not start the engine.	
<input type="checkbox"/>	Turn on headlamps.	Marker and tail lights on both SST and vehicle are lit.
<input type="checkbox"/>	Turn on left turn signal.	Left turn lights are not lit on both SST and vehicle.
<input type="checkbox"/>	Turn on right turn signal.	Right turn lights are not lit on both SST and vehicle.
<input type="checkbox"/>	Turn on left turn signal and apply foot brake.	Both stop lights are lit and not flashing on both SST and vehicle.
<input type="checkbox"/>	Turn on right turn signal and apply foot brake.	Both stop lights are lit and not flashing on both SST and vehicle.
<input type="checkbox"/>	Apply foot brake.	Both stop lights on the vehicle and the turn/stop lights on the SST are lit, but not flashing.
<input type="checkbox"/>	With hazard lights switch on, apply foot brake.	All turn signal lights are flashing on both SST and vehicle.
<input type="checkbox"/>	Verify owner’s manual is in glove box.	Owner’s manual is in the glove box.

Vehicle Appearance Check

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



CONNECTOR

