

Part Number: PK5D0-42K10-WH
PK5D0-42K11-WH

Kit Contents

Item #	Quantity Req'd.	Description
1	1	Trailer Module Harness
2	1	Trailer 4-Flat Harness
3	1	Trailer Power Wire Harness
4	1	Hardware Bag

Hardware Bag Contents

Item #	Quantity Req'd.	Description
1	1	Mounting Bracket, 4-Flat
2	2	Screw #10-24
3	2	Nut/Washer #10-24
4	51	Wire Tie 8"
5	4	Wire Tie 14"
6	2	Wire Tie, Push Mount Clip
7	4	Wire Tie, Bite Clamp
8	1	Connector Housing
9	6	Foam-Pad
10	1	Fuse Location Card
11	1	Owner's Manual

Additional Items Required For Installation

Item #	Quantity Req'd.	Description
1		Würth Black Silicone Special 250 or Euroseal Gel
2	1	Towing Hitch
3		Electric Insulating Tape

Conflicts

None

General Applicability

MY19 and newer RAV4 HV Models (Non-Kick Sensor)

Recommended Sequence of Application

Item #	Accessory
1	Trailer Module & Power Wire Harnesses
2	* Towing Hitch
3	* Trailer 4-Flat Harness

*Mandatory








Recommended Tools

Personal & Vehicle Protection	Notes
Safety Glasses	
Vehicle Protection	Cloth/Rag
Protective Tape	
Special Tools	Notes
Circuit Tester	
Installation Tools	Notes
Ratchet	3/8" Drive, Medium Extension
Socket	10, 12, and 14mm, 3/8" Drive
Trim Panel Remover Tool	
Screwdriver	Small Flat, Phillips #2
Pliers	Side Cutter
Wrench	10mm, 12mm, 14mm
Clip Remover	
Torque Wrench	5.0 N•m (4.0 lb•ft) to 31.0 N•m (371 lb•ft)
Measuring Tape	
Special Chemicals	Notes
VDC Approved Cleaner	

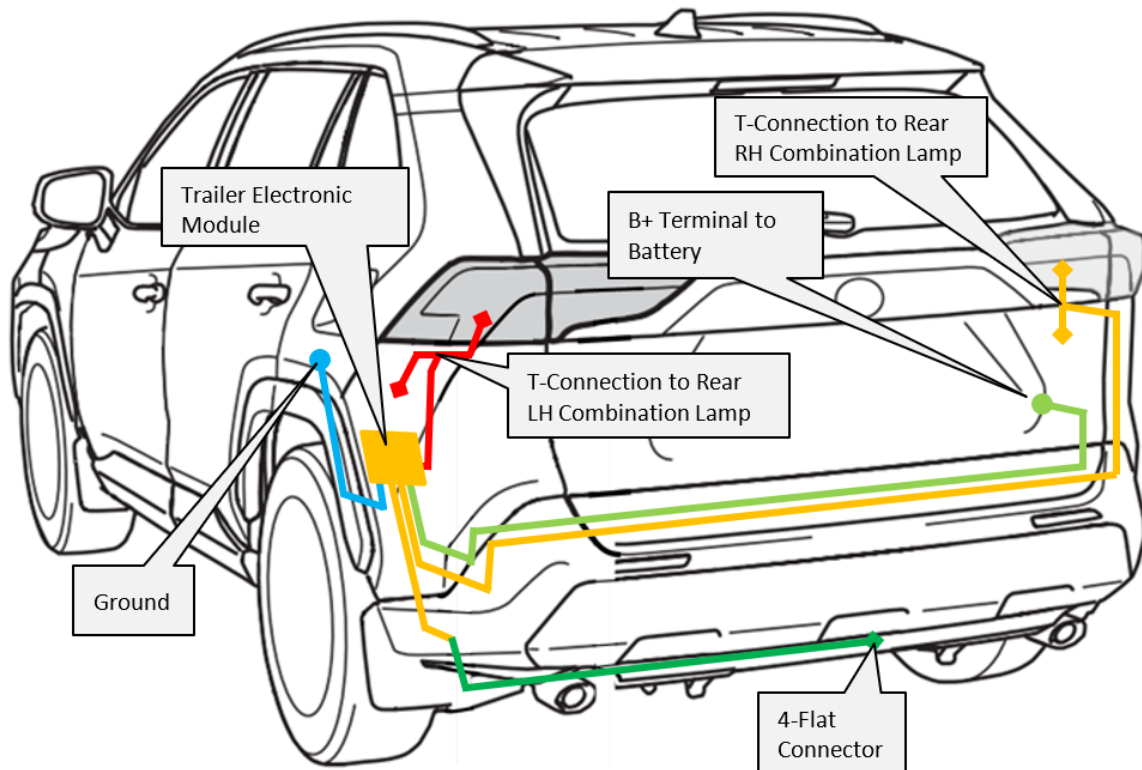
Vehicle Service Parts (may be required for reassembly)

Item #	Quantity Req'd.	Description
1		
2		

Legend

	STOP: Damage to the vehicle may occur. Do not proceed until process has been complied with.
	OPERATOR SAFETY: Use caution to avoid risk of injury.
	CAUTION: A process that must be carefully observed in order to reduce the risk of damage to the accessory/vehicle and to ensure a quality installation.
	TOOLS & EQUIPMENT: Used in Figures calls out the specific tools and equipment recommended for this 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.
	REGULATORY MARK: This mark indicates the component is related to regulatory compliance

Trailer Wire Harness General Outline (Under hood and Passenger Compartments)



Procedure



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, rechecking torque procedure, etc.).
- Vehicle Disassembly/Reassembly (panel removal, part storage, etc.).
- Electrical Component Disassembly/Reassembly (battery disconnection, connector removal, etc.).
- Use of Special Chemicals
- Temperature
- Torque Recheck
- Window Label Installation
- TPMS Check

Please refer to TIS for a copy of this document.

Contents indicated by () and () in this manual must be carefully followed during the installation. If they are ignored, functions of the accessory may be hindered, as well as personal injury or damage to the vehicle may result. Always carry out the installation as instructed.

When the vehicle parts are removed, keep all tapping screws, bolts and nuts organized so that the re-assembly will proceed correctly.

Do NOT remove vehicle parts except for those that are specified in the manual.

NOTE: Pictures depicted in this Installation Manual may not reflect the current model and model year vehicle.

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.

Prior to installation, check the following for damage or malfunction: Internal and external trim and body work.

NOTES:

Removed Parts: Place all removed parts on a protected surface.



Connectors: When disconnecting connectors, do not pull on the wires; pull on the connectors.



Cable Ties: When using cable ties to secure the harness, clip the ties after securing them.







Machine Screws: Start all machine screws by hand.









Print current document in color for better understanding.

Vehicle Preparation:

-  Professional installation by an authorized dealer is highly recommended. Read all instructions thoroughly prior to installation. Ensure all parts are included in the kit and follow all vehicle safety guidelines.
-  Read all battery warnings on disconnecting and reconnecting the vehicles battery terminal from the battery. Follow all procedures and disconnect and isolate the negative battery terminal.
-  Wear safety glasses and take all safety precautions during installation.
-  Use protective covers on vehicle (particularly cover to both fenders and driver seat) to prevent damage to the vehicle.

Legend of the Symbols Used:

-  Clips
-  Claws, Snaps, Etc.
-  Hinges, Guides, Clamps, Pins, Etc.
-  Screw, Nuts, Etc.
-  Bolts
-  Nuts

1. Verify the Kit Contents

- (a) Verify the contents for damage or missing parts.

2. Cover the Exhaust Pipe.

- (a) Cover the exhaust pipe with a clean shop towel.

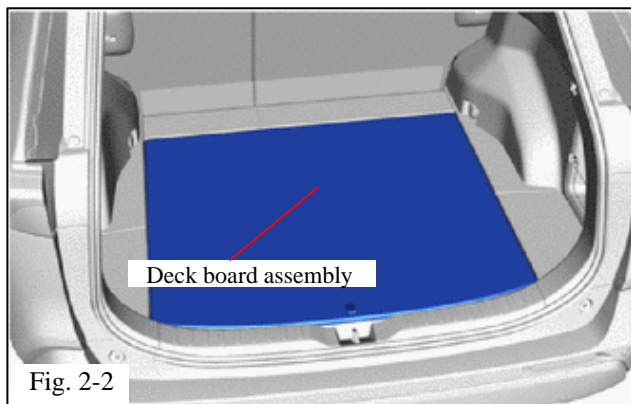
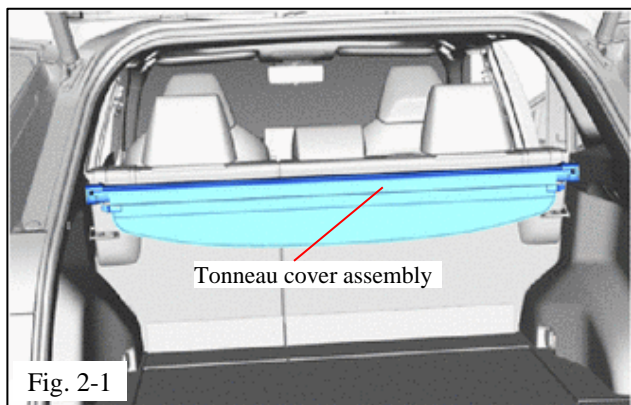
+ CAUTION: The muffler may be hot and/or sharp.

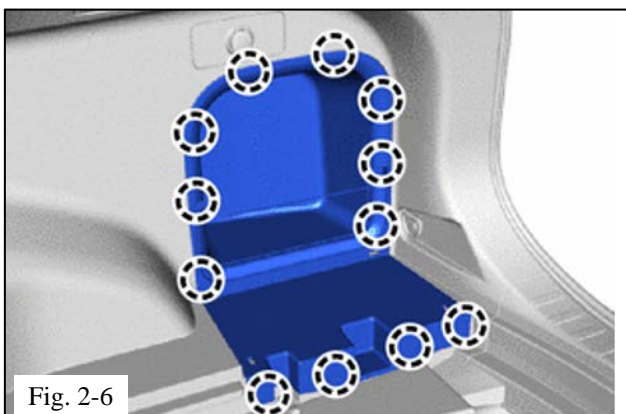
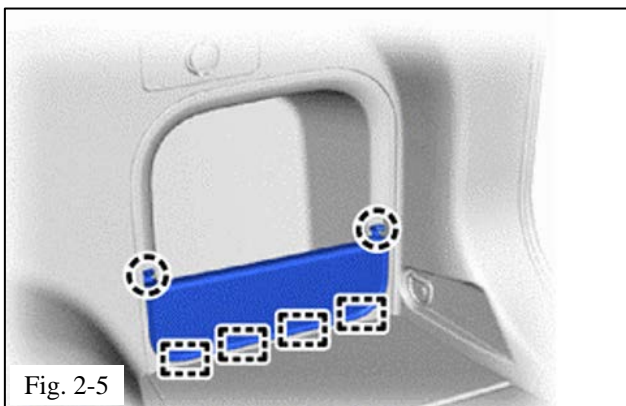
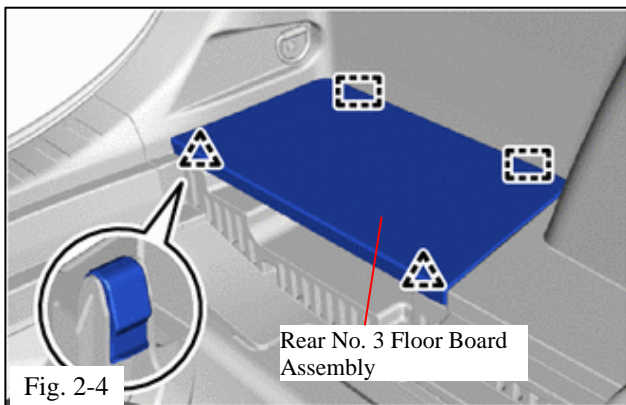
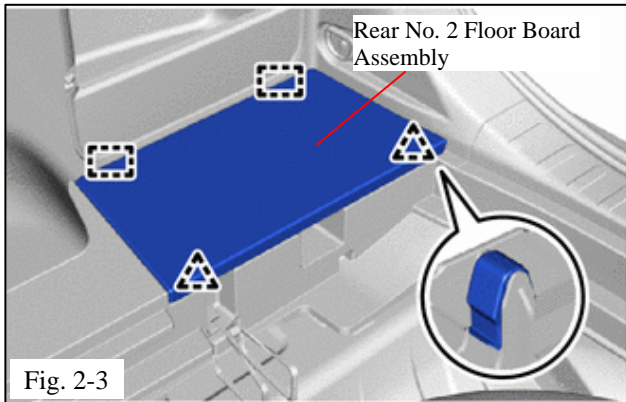
+ NOTE: Wear safety glasses.

- (b) For HV, the auxiliary battery is in the RR luggage compartment on the RH side.

- (c) Remove the RR Interior Trim Panels:

- (1) Remove the tonneau cover assembly (Fig. 2-1) and the deck board assembly (Fig. 2-2).

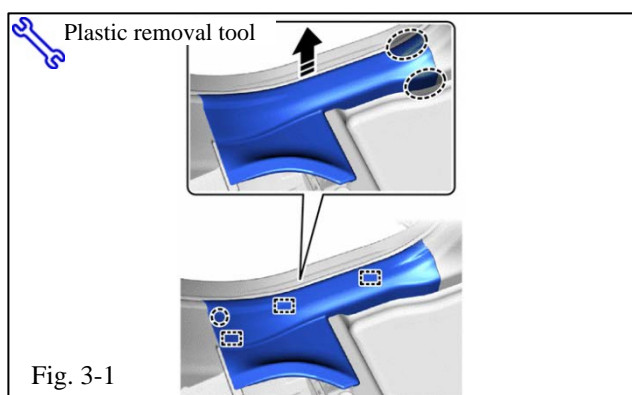
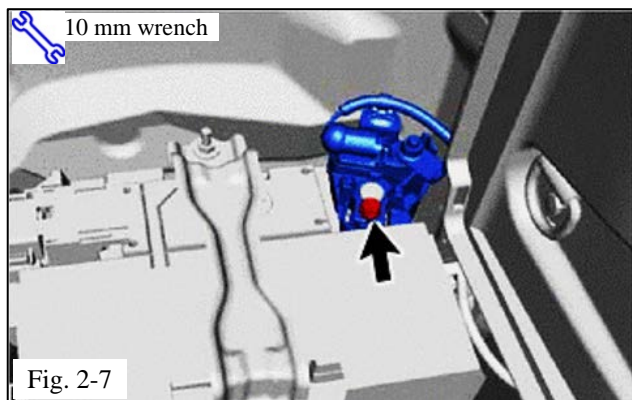




- (d) Detach the clips and guides and remove the Rear No. 2 floor board (on RH) (Fig. 2-3) as well Rear No. 3 Floor Board (on LH) (Fig. 2-4).
- (e) Place parts in a place where they will not be damaged or destroyed.

- (f) Remove the deck trim pocket cover plate. Detach the claw and guide and remove the deck trim pocket cover plate (Fig. 2-5).

- (g) Remove the battery hole cover by detaching the claws and removing the battery hole cover (Fig. 2-6).
- (h) Retain the part.



- (i) Remove the battery cable nut at the battery terminal (Fig. 2-7).
- (j) Disconnect the negative (-) battery terminal from the battery using a 10mm wrench.



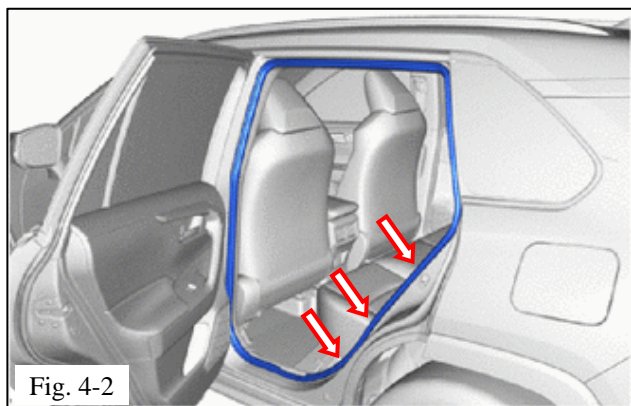
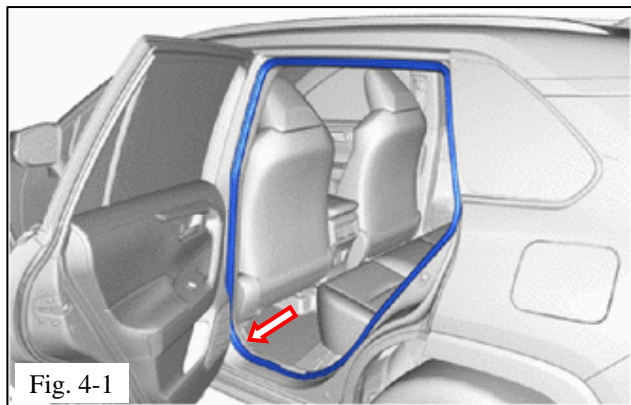
NOTE: Isolate the negative battery terminal.

3. Remove the Right Rear Door Scuff Plate LH.

- (a) Place your hand at the position shown and pull in the removal direction shown by the arrow to detach the claw and guide (Fig. 3-1).
- (b) Disengage the 1 claws and 3 guide and remove the RR door scuff plate LH (Fig. 3-1).
- (c) Lift in the direction indicated by the arrow to detach the clamp and claw and remove the RR door scuff plate LH.
- (d) Retain the part.
- (e) Repeat on the RH side.

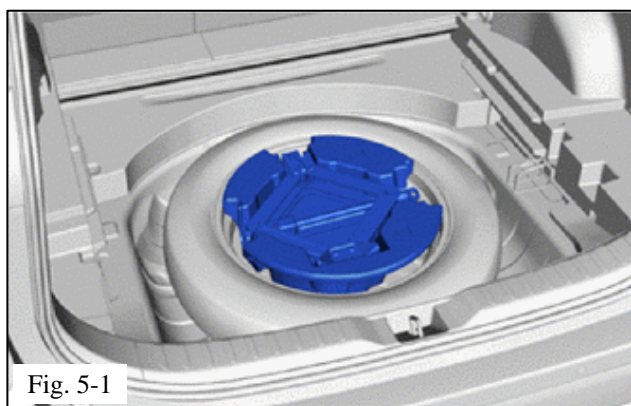
4. Partially Remove the Lower Corners of the Weatherstrips.

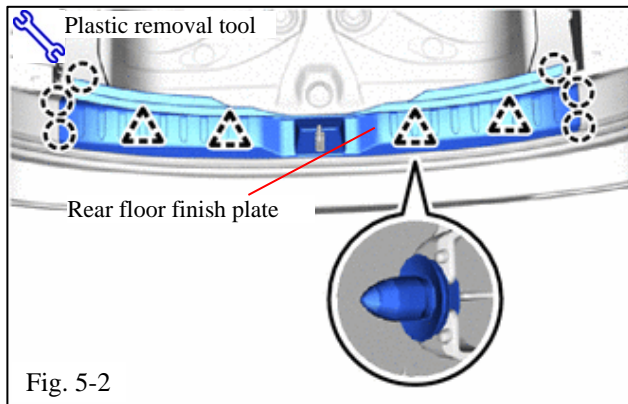
- (a) Partially remove the lower corners of the weather strips from RR door LH opening at the vehicle B-pillar and C-pillar as shown with arrows (Fig. 4-1 & 4-2).
- (b) LH shown. Repeat on RH side.



5. Disengage and Lift the Spare Wheel Cover Stopper.

- (a) Remove the spare wheel (Fig. 5-1).
- (b) Retain the parts and the fasteners.





- (c) Detach the claw and clip and remove the rear floor finish plate (Fig. 5-2).
- (d) Retain the part.

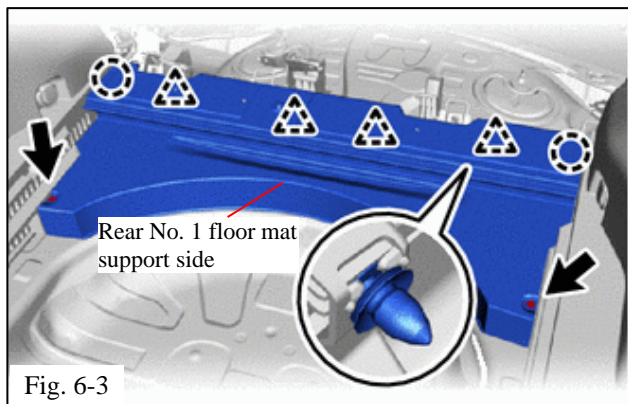
6. Remove the Plastic Trim Panel



- (a) Fold over the backseats.
- (b) RR backseat covers are secured to the rear No. 1 floor mat support side plate with 6 clips (3 x per each LH and RH) (Fig. 6-1 and respectively Fig. 6-2). Detach the clips and fold the flap on the backseats.



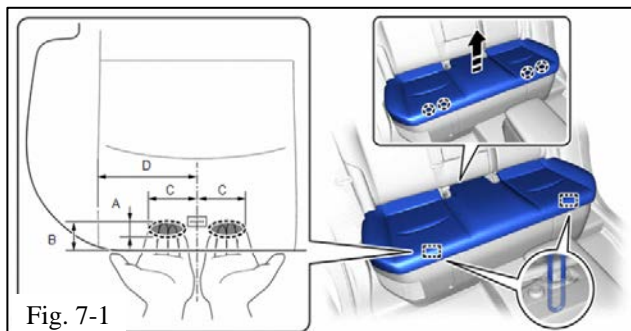
- (c) Remove the rear no. 1 floor mat support side plate.



- (1) Remove the 2 screws identified with black arrows (Fig. 6-3).
- (2) Detach the clips and claws.
- (3) Remove the rear no. 1 floor mat support side plate.
- (4) Retain the part.

7. Remove the RR Bench Seat Cushion Assembly.

- (a) Place hands on either side of the lock hook and lift upward to detach the cushion wire (Fig. 7-1).

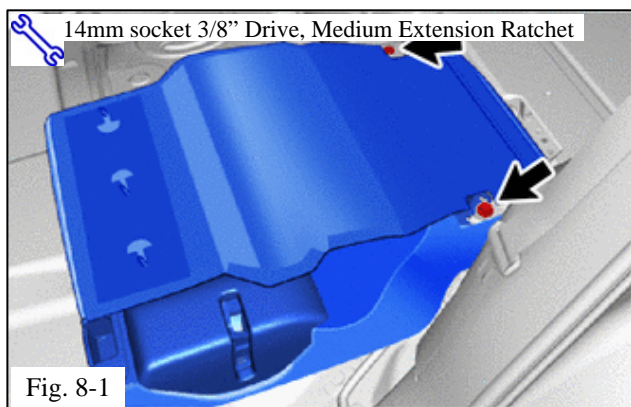


- (b) Detach rear seat hook. Place hands in position shown and remove cushion assembly in the direction shown (Fig. 7-2).



8. Remove the RR Backseats.

- (a) Remove the Rear Seatback Assembly LH by folding it forward (Fig. 8-1).
- (b) Remove the 2 bolts.



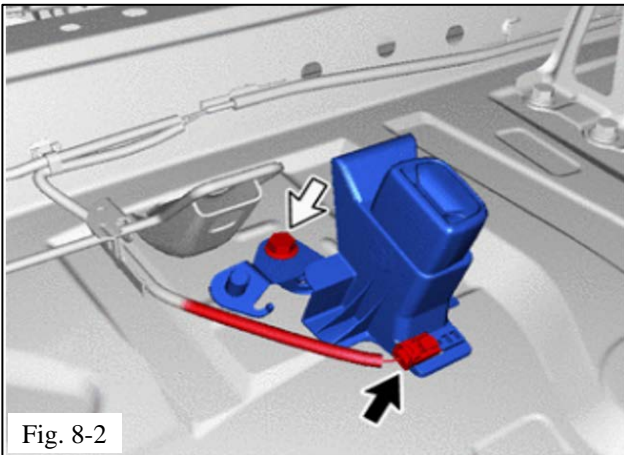


Fig. 8-2

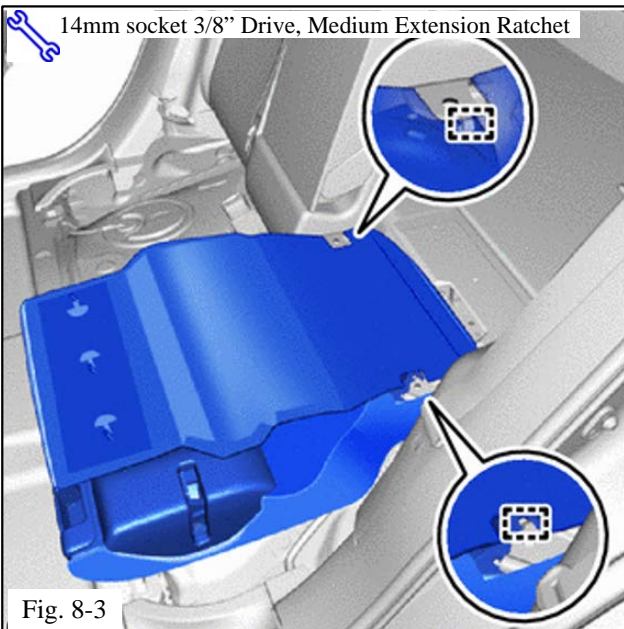


Fig. 8-3

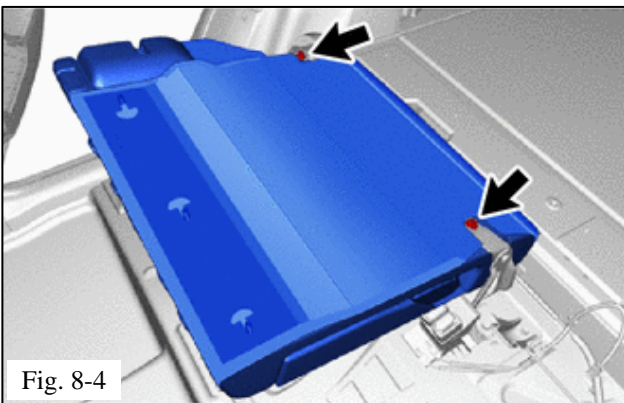


Fig. 8-4

(c) Remove the rear seat inner belt buckle (Fig. 8-2).

(1) Disconnect the connector.

⚠ NOTE: Only on vehicles equipped with seat belt warning system.

(2) Remove the 1 bolt.

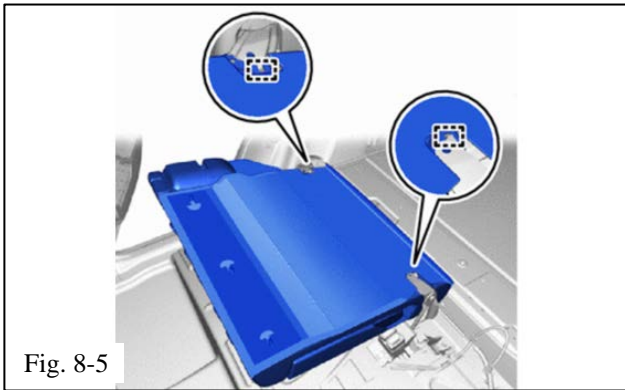
(d) Detach the guide and remove the rear seatback assembly LH (Fig. 8-3).

⚠ NOTE: Be careful not to damage the Rear Seatback Assembly LH, vehicle body exterior or interior parts.

(e) Retain the parts and retain the bolts.

(f) Remove the rear seatback assembly RH by folding it forward (Fig. 8-4).

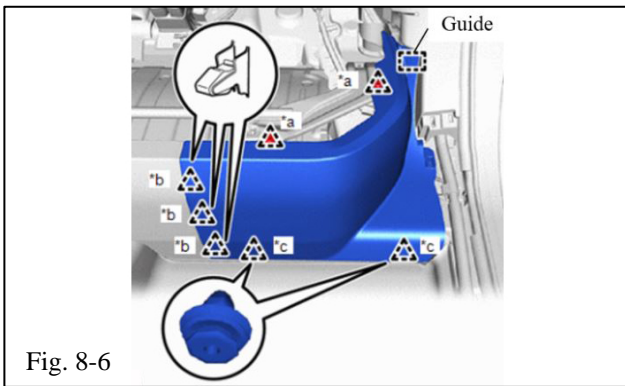
(g) Remove the 2 bolts.



(h) Detach the guide and remove the rear seatback assembly RH (Fig. 8-5).

⚠ NOTE: Be careful not to damage the rear seatback assembly RH, body exterior or interior parts.

(i) Retain the parts and retain the bolts.

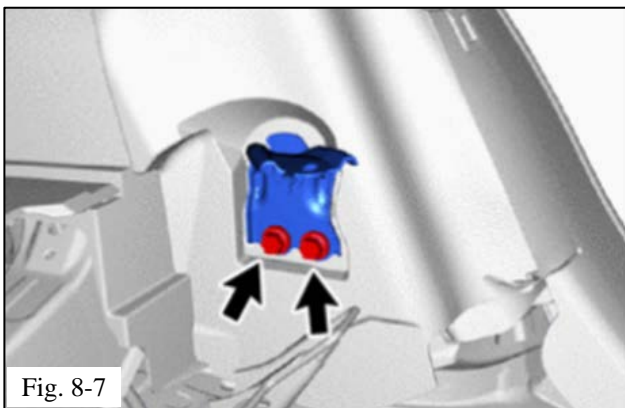


(j) Remove the battery service cover board

(1) Remove the 2 clips (clip A).

(2) Disengage 5 clips (clips B and C).

(k) Repeat Steps J(1)-J(2) on the RH side.

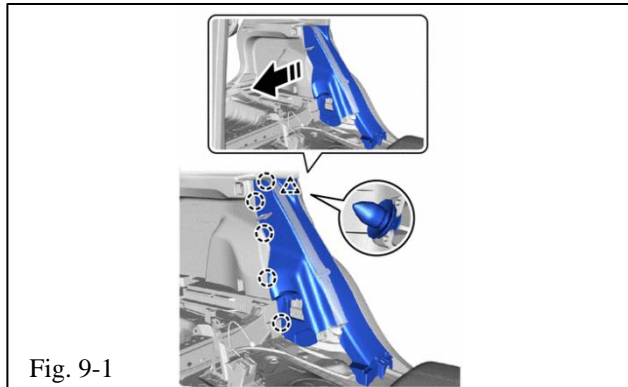


(l) Remove the rear seatback hinge sub-assembly (Fig. 8-7).

(m) Remove the 2 bolts and rear seatback hinge sub-assembly LH.

(n) Retain the parts and bolts.

(o) Repeat on the RH side.

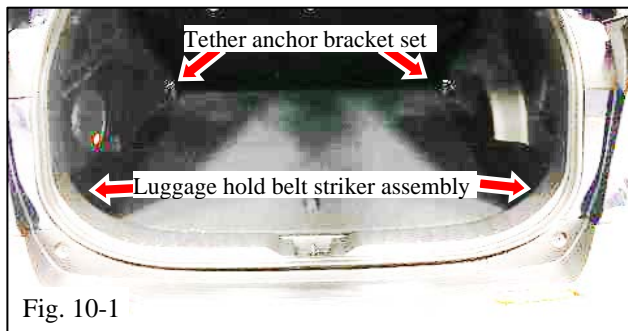


9. Disengage the Rear Seat LH Garnish.

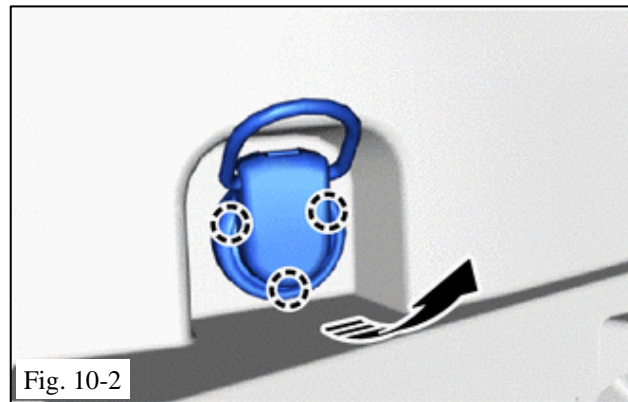
- (a) Disengage the Rear Seat LH Garnish by hand, and releasing the 5 snaps (Fig. 9-1).
- (b) Remove in the direction of the arrow. Retain the part.

⚠ NOTE: LH side shown. Repeat on the RH side.

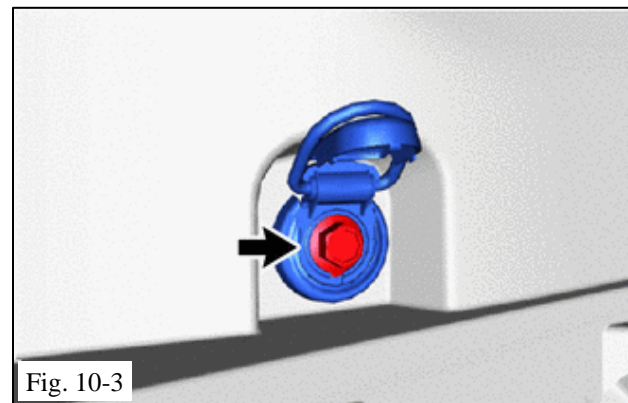
10. Remove the Anchor and Luggage Striker Assembly.



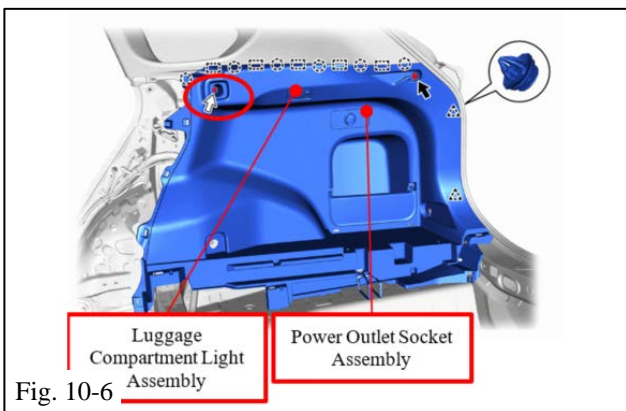
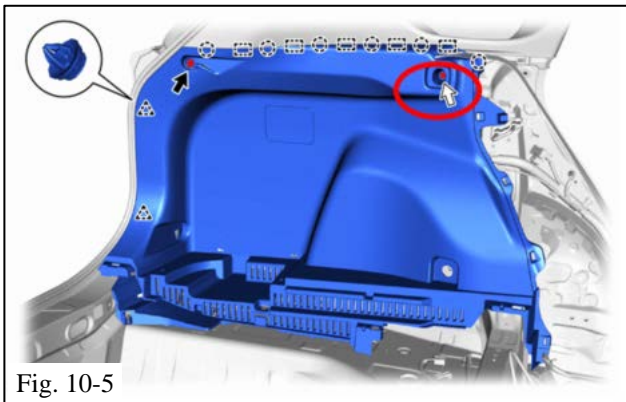
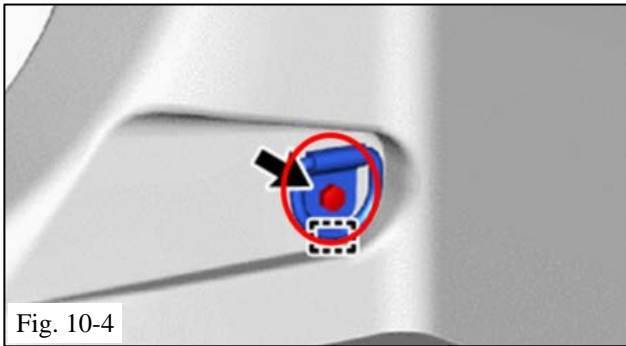
- (a) Looking from the back of the vehicle with the lift-gate open, identify and locate the tether anchor bracket set and the luggage hold belt striker assembly (Fig. 10-1).



- (b) Remove the tether anchor bracket set.
 - (1) Detach the claws and turn the cover up as shown by the arrow (Fig. 10-2).



- (2) Loosen the bolt and remove the tether anchor bracket set (Fig. 10-3).
 - (3) Repeat the process on the RH side.
 - (4) Retain the fasteners and the parts.



- (5) Remove the luggage hold belt striker assembly (Fig. 10-4.).
- (6) Remove the bolt.
- (7) Detach the guide and remove the luggage hold belt striker assembly.
- (8) Repeat on the RH.
- (9) Retain the fasteners and the parts.
- (c) Remove the deck lower trim side panel assembly LH (Fig. 10-5).
 - (1) Remove the clip indicated with black arrow (Fig. 10-5).
 - (2) Remove the clips (Fig. 10-5 shown).
 - (3) Using a #10 Philips screwdriver, remove the screw.
 - (4) Detach the clips, claws and guides located in between deck lower trim side panel assembly and deck upper trim side panel assembly.
- (d) Remove the deck trim side panel assembly LH.
- (e) Retain the deck lower trim side panel assembly and place it in a place where it will not be damaged.
- (f) Remove the deck lower trim side panel assembly RH (Fig. 10-6).
 - (1) Remove the clip indicated with black arrow (Fig. 10-6).
 - (2) Remove the clips.

(3) Using a #10 Philips screwdriver, remove the screw (Fig. 10-6).

(g) Detach the clips, claws and guides located between the RH deck lower trim side panel assembly and RH deck upper trim side panel assembly.

(h) On the RH deck lower trim side panel assembly locate and identify:

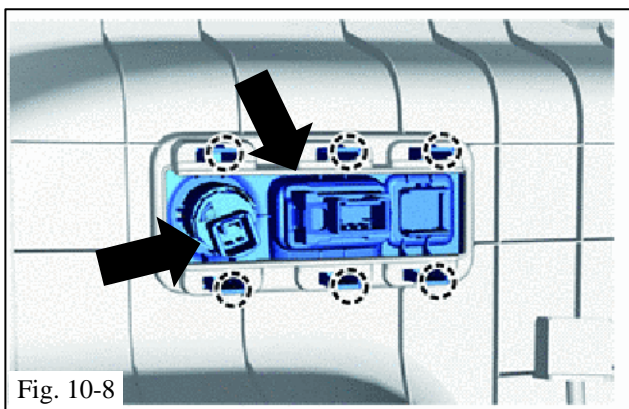
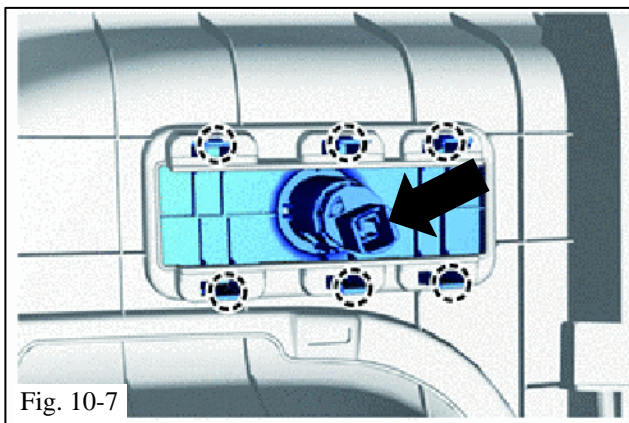
(1) Luggage Compartment Light Assembly (Fig. 10-6).

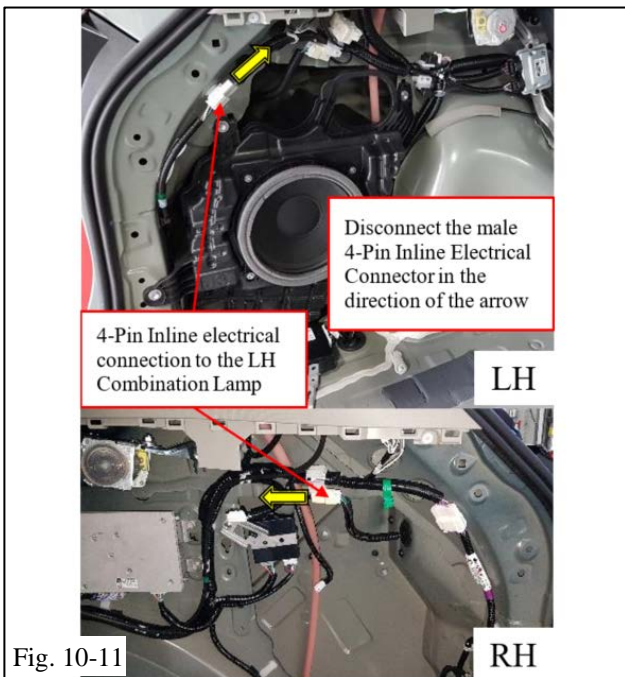
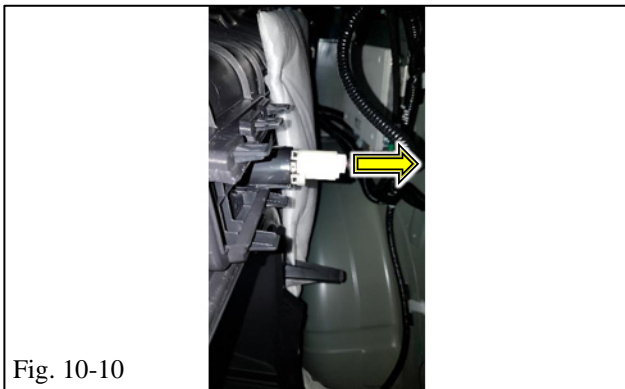
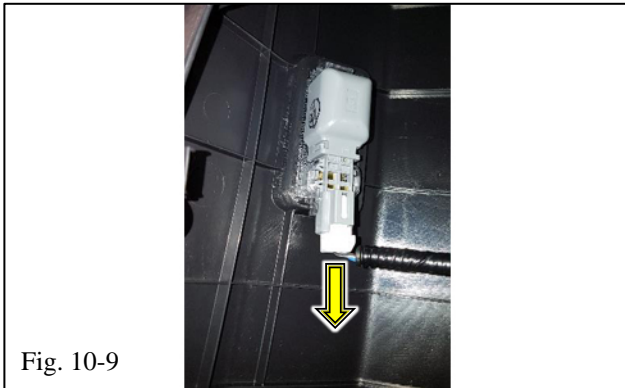
(2) Power the outlet socket assembly.

Looking on the back of the RH deck lower trim side panel assembly Fig. 10-6):

(1) w/o voltage inverter (Fig. 10-7).

(2) w/ voltage inverter (Fig. 10-8).





- (i) Disconnect in the direction of the arrow.
 - (1) Luggage Compartment Light Assembly connector (Fig. 10-9).
 - (2) Power outlet socket assembly connector, at locations shown in Fig. 10-7 or Fig. 10-8.
 - (3) Power outlet socket assembly w/o Voltage Inverter is exemplified in Fig. 10-10.
 - (4) Retain the RH Deck Lower Trim Side Panel Assembly and place it in a place where will not be damaged.
 - (5) Retain all removed fasteners.
- (j) Locate the 4-Pin inline electrical connector to the LH combination lamp (Fig. 10-11).
- (k) Disconnect the LH male 4-Pin Inline Electrical Connector (Fig. 10-11), disengaging the male connector from the female connector attached on the vehicle body.
- (l) Repeat on the RH (Fig. 10-11).

11. Install the Trailer Power Wire

- (a) Locate on the trailer power wire harness (Item 3 in the Kit), the fuse housing (Fig. 11-1).

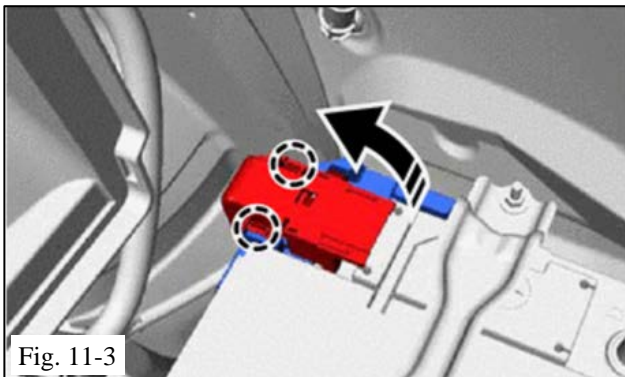


- (b) Remove the 15Amp fuse before proceeding to the next step (Fig. 11-2).
- (c) Retain the fuse. The fuse will be re-installed in a later step (Fig. 11-2).

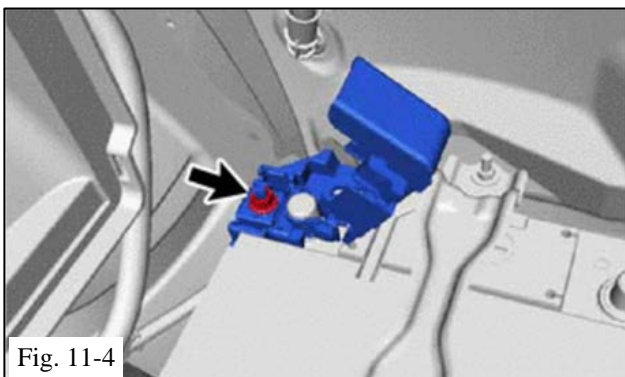


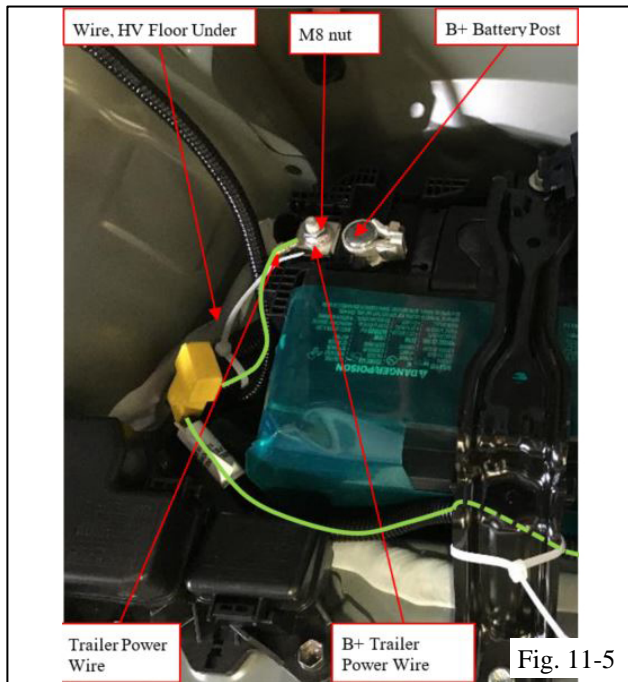
- (d) Attach the trailer power wire from B+ to the Wire, HV Floor Under bracket.

- (1) Detach the 2 claws and open the connector cover (Fig. 11-3) in direction of the arrow shown.



- (2) Loosen the nut (Fig. 11-4) and disconnect the HV Floor Under Bracket from the Positive (+) Auxiliary Battery Terminal.





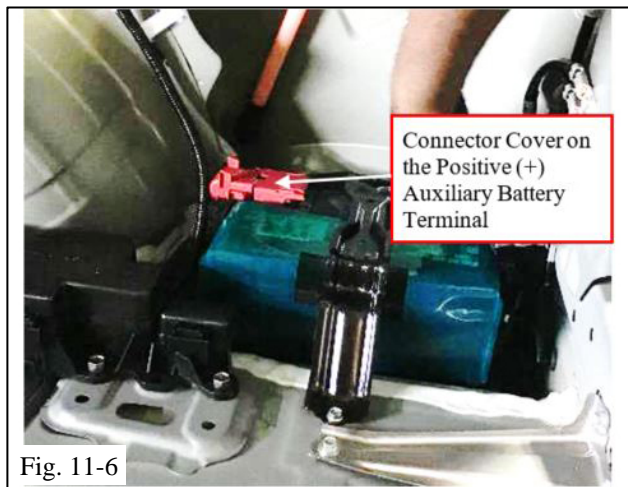
(e) Install the terminal from the trailer power wire to the wire, HV floor under bracket as shown in Fig. 11-5.

⚠ NOTE: Make sure to position the ring terminal so that the protective cover can be reattached over the Positive (+) Auxiliary Battery Terminal.

(f) Reattach the M8 nut, to the Wire, HV Floor Under bracket (Fig. 11-5).

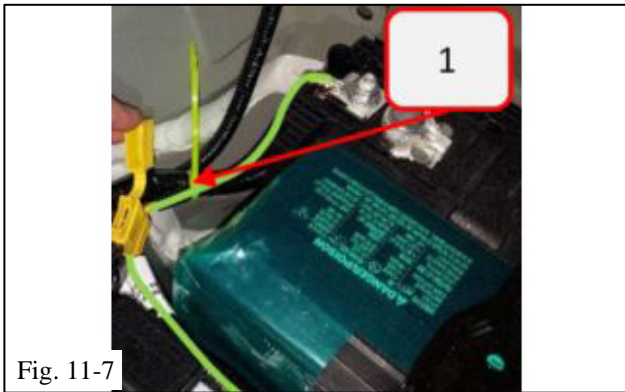
⚠ Torque: Main Wire Engine Room Bracket nut: 7.6 N·m (67.3 in·lbf).

— Trailer Power Wire – visible route
- - - Trailer Power Wire – not visible route

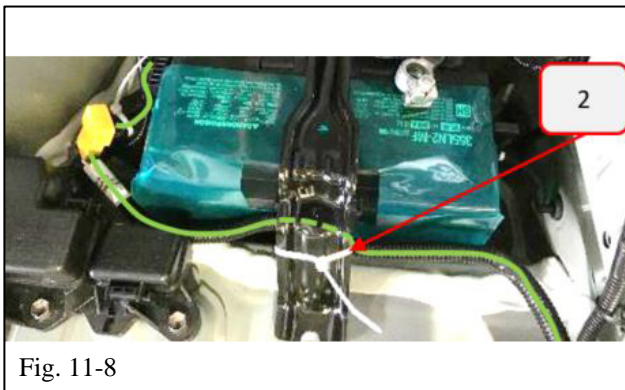


(g) Attach the 2 claws of the connector cover on the positive (+) auxiliary battery terminal (Fig. 11-6) to close the cover.

(h) Route trailer power wire B+ (Item #3 in kit contents) along vehicle wire harness (Fig. 11-5).



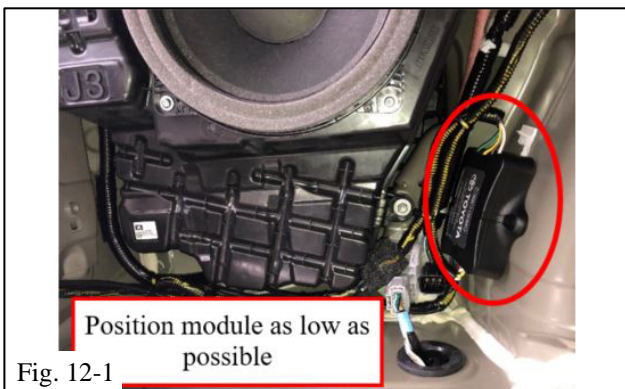
- (i) Secure the trailer power wire with wire ties (Item #4 in hardware bag) to the vehicle wire harness as shown (Fig. 11-7).
- (j) Clip the excess of wire ties for all wire ties used.

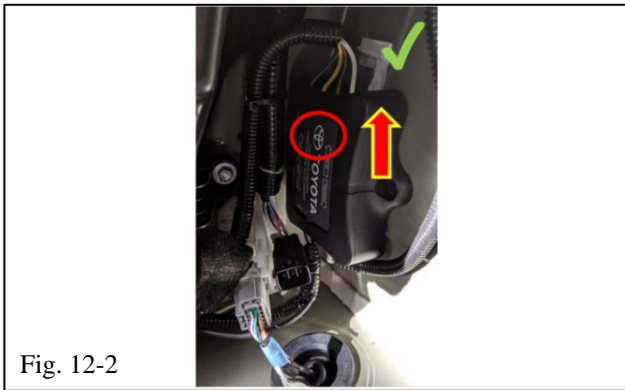


⚠ NOTE: make sure the wire tie is positioned on the corrugated tube and not on the wire (Fig. 11-8).

12. Install the Trailer Module Harness, Trailer Wire to the RR Lamp Assemblies, Trailer Ground Wire and Trailer Power Wire.

- (a) Install the trailer electronic module (part of trailer module harness, Item#1 in kit contents) in the trunk area:
- (b) On the LH side of the vehicle, locate flat surface to install trailer module nearby on the RR LH wheel house area (Fig. 12-1).





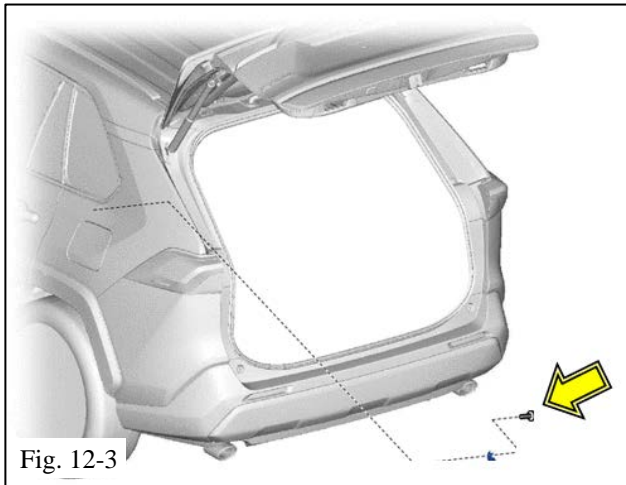
- (c) Clean the area with VDC approved cleaner (Fig. 12-2).
- (d) Determine the location of the trailer electronic module.
- (e) Position the module against the wheel-well as shown (Fig. 12-2).

⚠ NOTE: Position the module as low as possible. Orient the module such that the Toyota logo is on top.

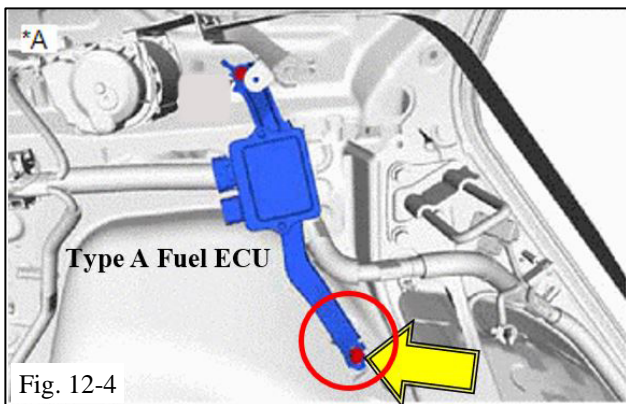
- (f) Peel approximative 5mm of the edge of the trailer electronic module double sided tape and temporarily affix the trailer electronic module to the vehicle body panel (Fig. 12-2).

⚠ NOTE: Test fit the LH Deck lower trim side panel assembly, to confirm the trailer electronic module and the trailer wire harness will not interfere with the trim side panel at reassembly.

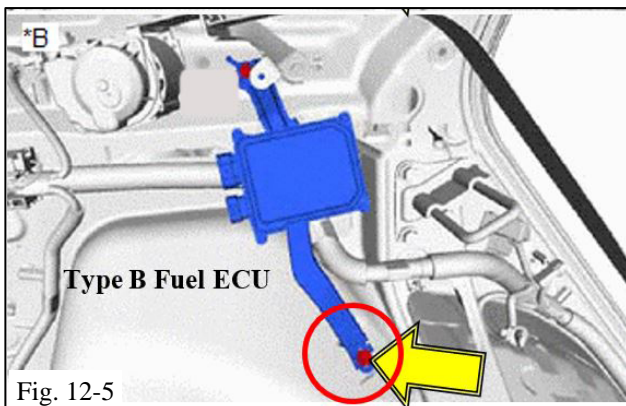
- (g) Mark the temporary location, completely peel off the double sided tape liner, place trailer electronic module on the vehicle body and apply pressure to permanently affix the trailer electronic module on the vehicle body (Fig. 12-2).
- (h) Attach trailer wire ground terminal (white wire with ring terminal part of trailer module harness, Item#1 in kit contents) to vehicle ground bolt.

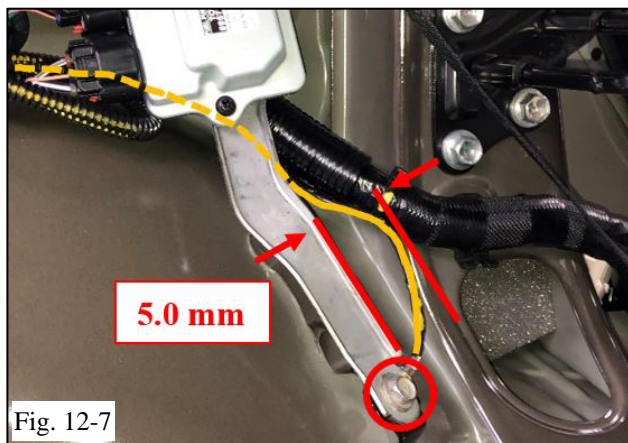
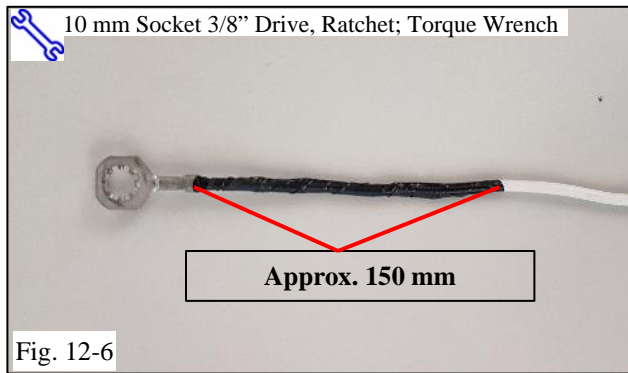


- (i) Locate the vehicle ground bolt (Fig. 12-3)
The ground bolt is located in the vehicle RR LH quarter on the vehicle C-pillar.



- (j) Its location is indicated by arrows in Fig. 12-4 and Fig. 12-5, depending on the vehicle fuel ECU type.





- (k) Remove the ground bolt.
- (l) On the ground wire measure, starting with the terminal, approx. 150mm (6inches) and mark the length.
- (m) Wrap the ground wire between the terminal and the mark with electrical insulating tape (Fig. 12-6).
- (n) Position the ground wire terminal so a minimum clearance of 5.0mm (0.2inches) is created between the wire and the ECU bracket stiffener (Fig. 12-7).
- (o) Attach trailer ground wire to vehicle ground bolt; while attaching the trailer ground wire terminal orient the trailer ground wire.
- (p) Reinstall the ground bolt (Fig. 12-7).

⚠ NOTE: Make sure to re-install all other existing ground wires/terminals at the location.

⚠ Torque: Ground bolt: 10 N·m (7 ft·lbf).

- Trailer Wire Ground
- - - Trailer Wire Ground - non visible route

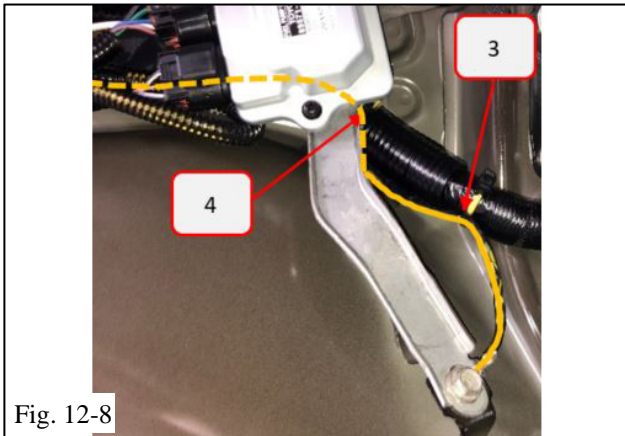


Fig. 12-8

(q) Secure the trailer wire ground to the vehicle wire harness or vehicle body first with electric insulating tape, then securing with wire ties as shown (Fig. 12-8 and Fig. 12-9).

- Trailer Wire Ground
- - - Trailer Wire Ground - non visible route
- Branch to LH RR Comb Lamp Assy

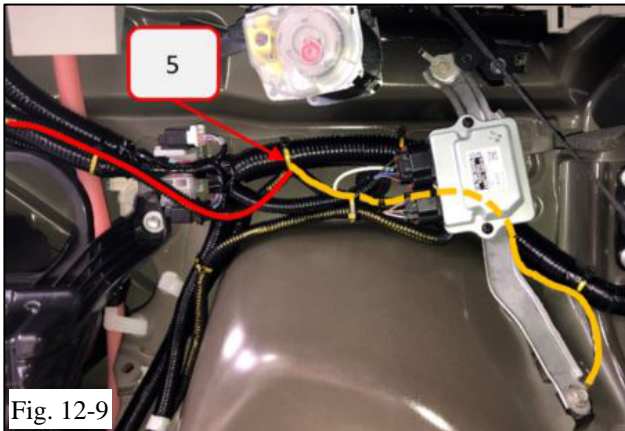


Fig. 12-9

(r) Clip the excess of wire ties for all wire ties used.

13. Connect the LH RR Comb Lamp Assembly.

(a) Connect the LH RR Comb Lamp Assy (part of Trailer Module Harness item#1 in the Kit contents).

- (1) Route the trailer wire harness along vehicle wire harness and secure it with a wire tie every 150 mm (6 inches).
- (2) Secure the LH trailer wire harness branch with wire ties to the vehicle wire harness as shown (Fig. 13-1).
- (3) Clip the excess of wire ties for all wire ties used.

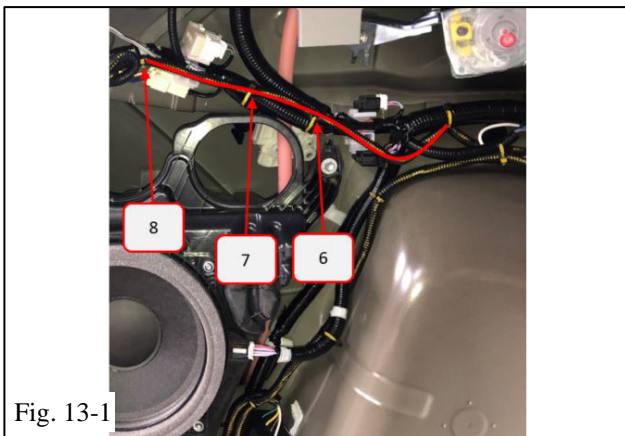
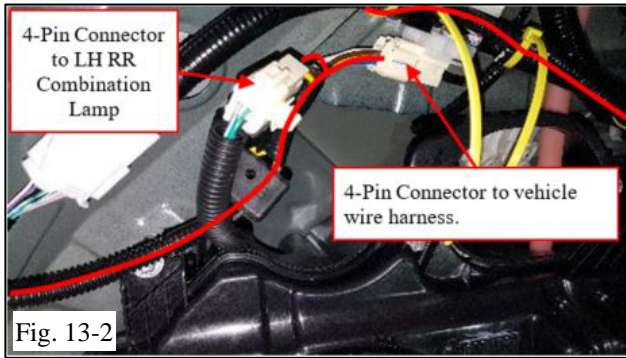
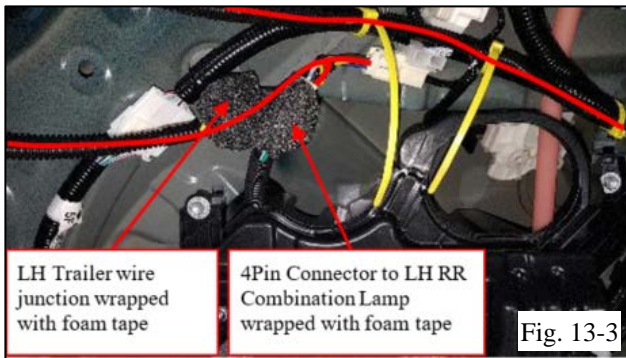


Fig. 13-1



- (b) Plug the trailer t-connection end with yellow & brown wires into the 4-pin connector from LH RR combination lamp assy (Fig. 13-2).
- (c) Plug the trailer t-connection into the 4-Pin Connector from vehicle wire harness (Fig. 13-2).

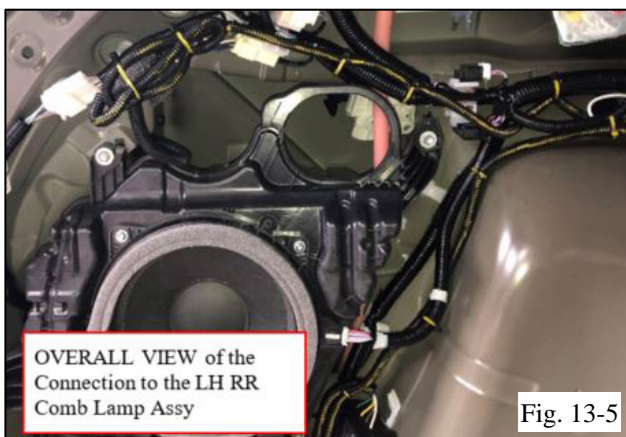
⚠ NOTE: Do not secure trailer wire to water hose, which must be free for proper operation.



- (d) Wrap foam pads (Item #9 in the hardware bag) around the loose 4-Pin connection and plastic junction block of the trailer wire (Fig. 13-3).



- (e) Bundle the loose 4-Pin connection and plastic junction block of the trailer wire harness to the vehicle wire harness and secure with wire ties shown in Fig. 13-4.



- (f) Loop and secure the trailer wire with wire ties to the vehicle wire harness as shown (Fig. 13-4). Overall view of the installation is shown in (Fig. 13-5).
- (g) Clip the excess of wire ties for all wire ties used.

**14. Prepare the connection RH Rear
Combination Lamp Assy.**

(a) Prepare the connection RH rear combination lamp assy (part of Trailer Module Harness item#1 in the Kit contents) trailer wire harness as well as the Trailer Power Wire from B(+):

(1) Route Branch to RH RR Comb Lamp Assy wire along vehicle Body Lower Back, Panel Subassembly.

(2) Loosely position the Bite Clamps (item #7 in the Hardware Bag kit) and Push Mount Clips (item#6 in the Hardware Bag kit) on the vehicle body as shown (Fig. 14-1, Fig. 14-2, Fig. 14-3).

⚠ NOTE: In this step, do not close the Bite Clamp and Push Mount Clip Wire Ties.

⚠ NOTE: While passing the wires under the Body Lower Back, Panel Subassembly reinforcements, avoid sharp edges that may damage the wire or cause injury.

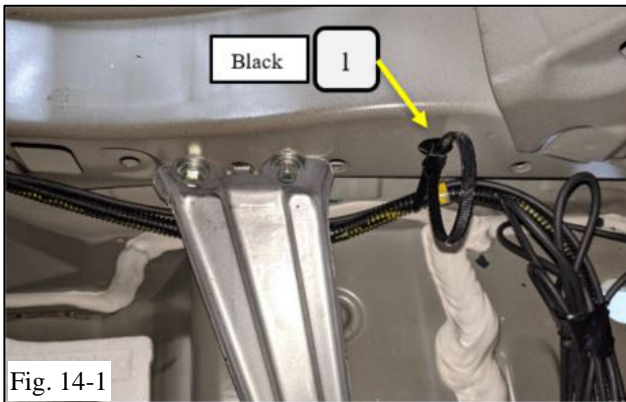


Fig. 14-1

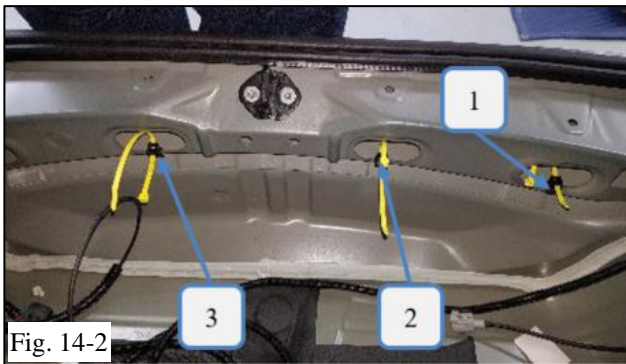


Fig. 14-2

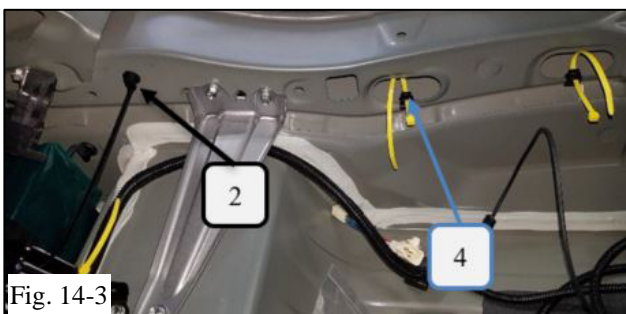
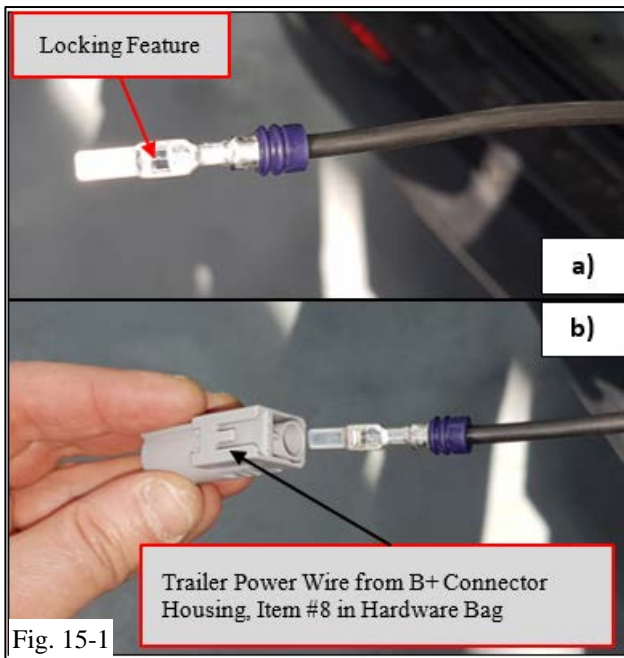


Fig. 14-3

15. Prepare the Connection Between Power Wire and Trailer Power Wire From B+.

(a) Insert the power wire terminal into the Connector Housing (Item #8 in Hardware Bag Kit).

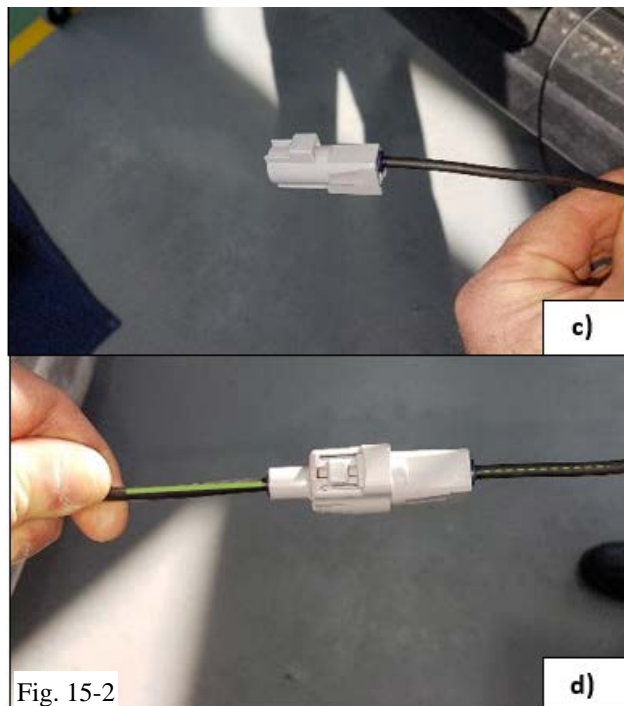
(1) Insert the trailer power wire terminal into the connector housing (Fig. 15-1) (Sides A&B).



(2) Push to lock the Trailer Power Wire terminal into position (Fig. 15-2). Make sure terminal is fully inserted. An audible click is to be registered (Fig. 15-2).

(3) Pull gently the Trailer Power Wire, holding the Connector Housing, confirming Trailer Power Wire terminal is correctly inserted in the Connector Housing. (Fig. 15-2).

(4) On the LH side of the vehicle, connect the connector from power wire (Trailer Module Harness Side) and Trailer Power Wire from B+.



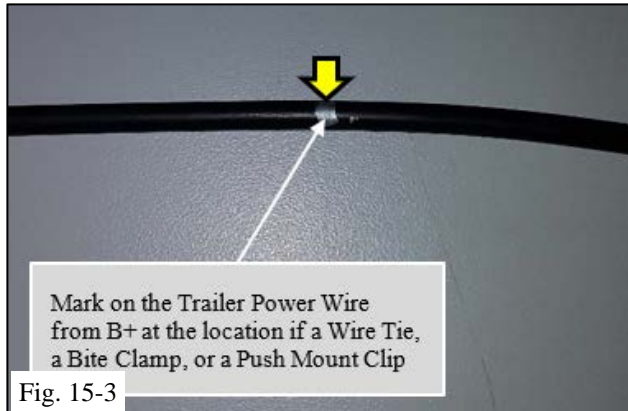


Fig. 15-3

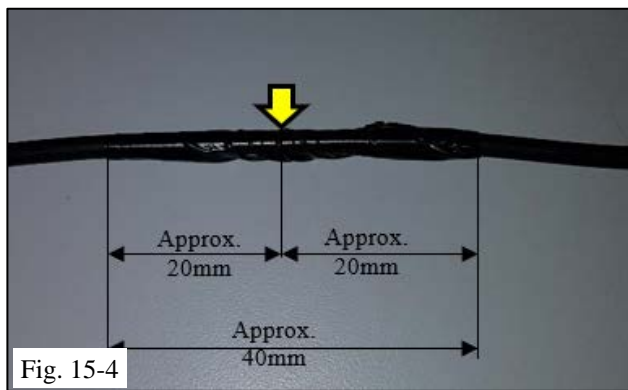


Fig. 15-4

(b) Typical electric insulation tape application on the Trailer Power Wire from B+ :

(1) Laying the trailer power wire from B+ along the considered routing, mark the position where the trailer power wire from B+ will be attached to the vehicle wire harness with the wire ties (Fig. 15-3). Shown with silver for contrast purposes.

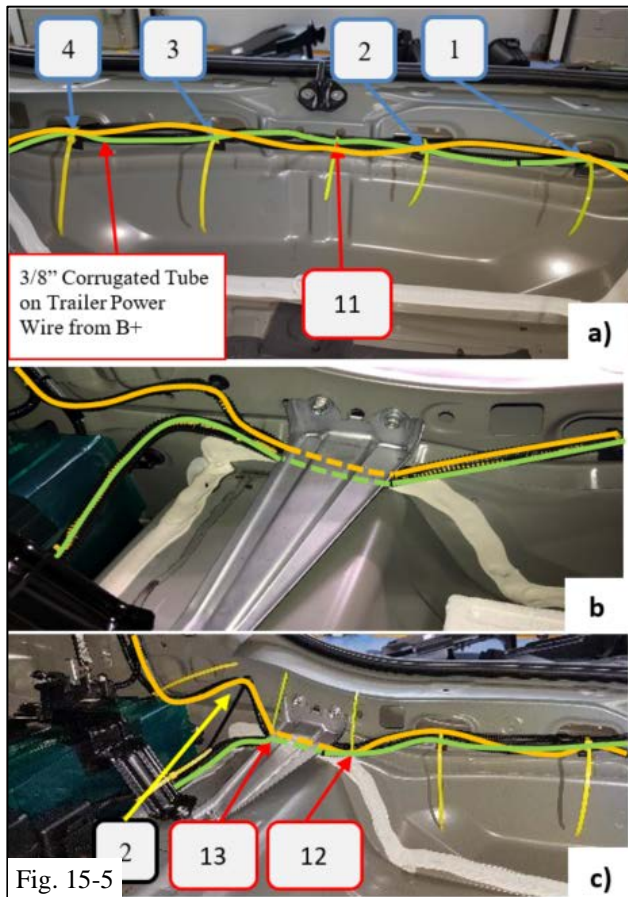
(2) Wrap electric insulating tape on the trailer power wire from B+ at the marked locations approximate 20mm in each side of the markings (exemplified in Fig. 23-2) on a length of approximate 40mm (Fig. 15-4).

(3) Repeat steps 5(b)(1) and 5(b)(2) for Bite Clamp Wire Ties #2, #3 and #4

(4) Repeat steps 5(b)(1) and 5(b)(2) for Push Pin Wire Ties #1 and #2.

⚠ NOTE: Loosely position tie wraps around the respective wire harness. Do not secure any tie wraps at this stage.

- Trailer Power Wire from B+
- Branch to RH RR Comb Lamp Assy
- - - Trailer Power Wire from B+ - non visible route
- - - Branch to RH RR Comb Lamp Assy – non visible route



(5) Lay the trailer power wire from B+ and the trailer wire harness to RH rear combination lamp Assy along the body lower back, panel subassembly (Fig. 15-5 [a]).

NOTE: Route Trailer Power Wire from B+ underneath the Body Lower Back, Panel Subassembly reinforcements (Fig. 15-5 [b]).

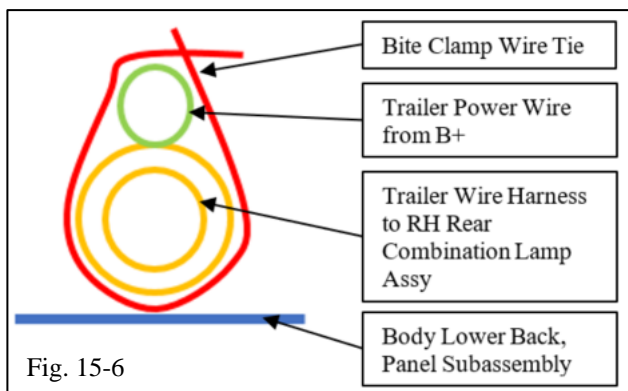
(6) Loosely secure wire harness to the vehicle body (Fig. 15-5 [a] & Fig. 15-5 [c]) using:

- (1) Bite Clamp Wire Tie 8" 1,2,3,4 x4
- (2) Push Pin Mount Wire Tie 8" 1,2 x2
- (3) Wire ties 11,12,13 8" x3

NOTE: Make sure all tie wraps on the Trailer Power Wire from B+ are closing over electric insulating tape.

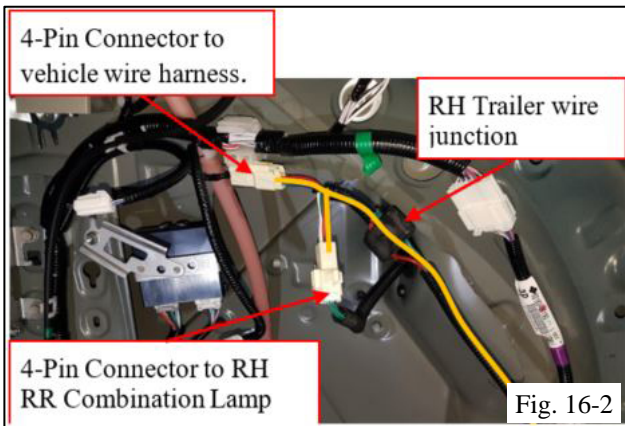
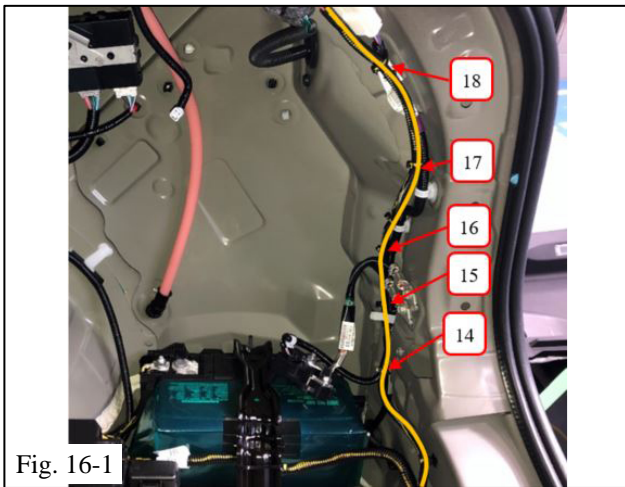
NOTE: Test fit to confirm that no interference will occur between the trailer wire harness and the rear floor finish plate.

NOTE: Make sure that the trailer wire harness to RH rear combination lamp Assy is placed between the trailer power wire and vehicle body (Fig. 15-6).



16. Connect the RH RR Combination Lamp Assembly.

- (a) Connect the RH RR Comb Lamp Assy (part of Trailer Module Harness item#1 in the Kit contents).
- (b) Continue routing trailer wire harness along vehicle wire harness toward the RR RH Combination Lamp as shown in Fig. 16-1, loosely securing the routing to the vehicle wire harness using wire ties every 150 mm (6 inches).
- (c) Clip the excess of wire ties for all wire ties used.



- (d) Plug the trailer t-connection end with Green & Red wire into the 4-Pin Connector from RH RR Combination Lamp Assy (Fig. 16-2).
- (e) Plug the trailer t-connection into the 4-Pin Connector from vehicle wire harness (Fig. 16-2).



- (f) Wrap foam pads around the 4-Pin Connector and RH Trailer Wire Junction of the trailer wire harness (Fig. 16-3).



Fig. 16-4

- (g) Bundle the 4-Pin Connector and plastic junction block of the trailer wire harness to the vehicle wire harness and secure with wire tie (Fig. 16-4).
- (h) Clip the excess of wire ties for all wire ties used.
- (i) Secure all 8” wire ties, Bite Clamp wire ties and Push Pin wire ties.

⚠ NOTE: Start securing wire ties sequentially (i.e. secure wire ties from RH side to LH side of vehicle):

- 8” WIRE TIE x 9 #19 towards #11.
- BITE CLAMP WIRE TIE x 4 #4 towards #1
- PUSH PIN WIRE TIE X 2 #2 towards #1

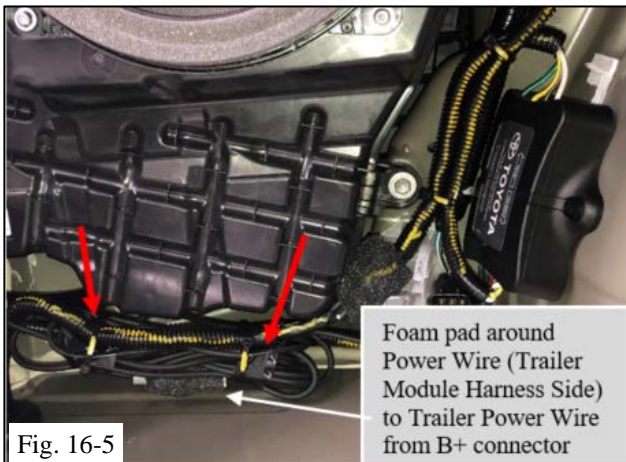


Fig. 16-5

- (j) Wrap the connector with Foam Pads (Item #9 in the Hardware Bag) (Fig. 16-5).
- (k) Loop the excess of Trailer Power Wire from B+ and secure the loop with electrical insulating tape before securing the bundle with wire ties to the vehicle wire harness.
- (l) Make the loop about 180mm (7 inch) in length (Fig. 16-5).

⚠ NOTE: Position the bundle as close to the trailer module as possible.

⚠ NOTE: Do not create any stress in the wire harness when tying the bundle for the Trailer Power Wire. Test fit the LH Lower Trim Panel to ensure no interference during reassembly.

⚠ NOTE: The connection between Power Wire (Trailer Module Harness Side) and Trailer Power Wire from B+, is secured with wire tie.

17. Install the Trailer 4-Flat Harness.

⚠ NOTE: Install Towing Hitch before proceeding with next steps (PLEASE REFER TO TOWING HITCH INSTALLATION INSTRUCTIONS – separate document).

⚠ NOTE: Do not reinstall rear bumper fascia until completing the 4-Flat Harness installation.

- (a) Locate Trailer 4-Flat Harness grommet installation hole (Fig. 17-1).
- (b) Remove the hole dummy cover and discard it.



18. Route the 4-Flat Connector Harness.

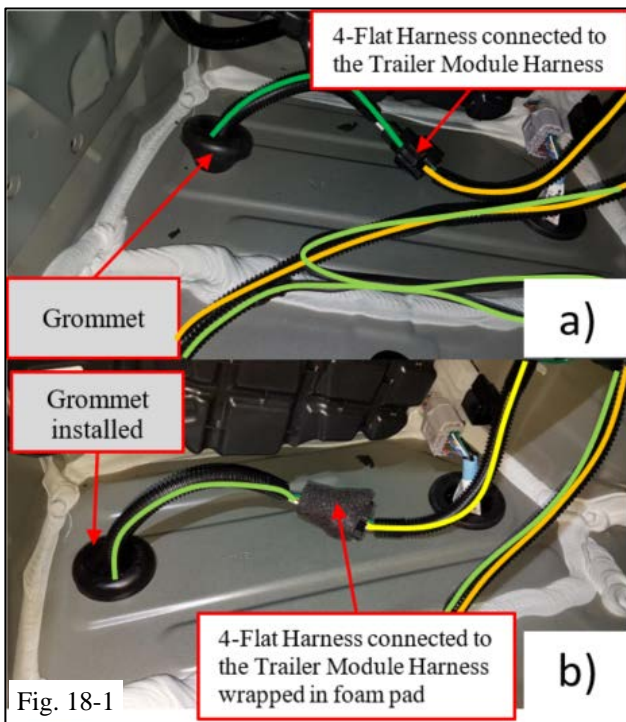
- (a) Route the 4-Flat connector harness through the hole (Fig. 18-1[a] and Fig. 18-2[b]).
- (b) Begin routing the side with the square connector from the exterior of the vehicle toward the interior of the vehicle.

⚠ NOTE: Pull the Grommet past the hole to bring it into the interior of the vehicle. Then, push the grommet back into the hole to fix its position (Fig. 18-1[b]).

- Branch to RH/LH RR Comb Lamp Assy
- Power wire (trailer module harness side)
- 4-flat Connector Harness

- (c) Connect the 4-Flat Harness to the Trailer Module Harness Fig. 18-1[a].

- (1) Wrap the connectors with a foam pad Fig. 18-1[b].



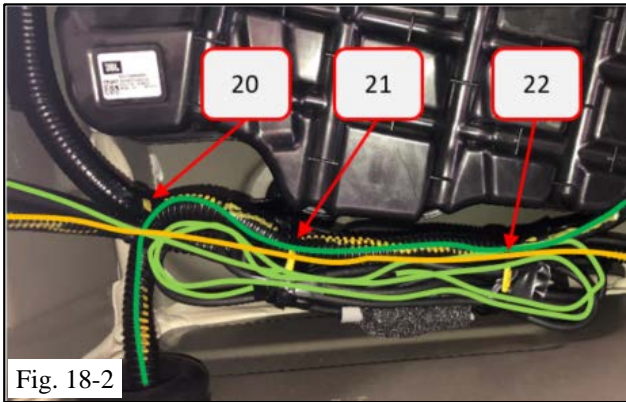


Fig. 18-2

(d) Secure the 4-Flat Harness connection to Trailer Module Harness wrapped with foam tape, to trailer wire harness with wire ties (Fig. 18-2).

⚠ NOTE: Make sure that all tie wraps on the Trailer Power Wire from B+ are closing over the electric insulating tape.

⚠ NOTE: Application of the electric insulating tape on the Trailer Power Wire is explained in Section 3, Step 5-vi above and applies for all wire ties shown in Fig. 18-2.

(e) Clip the excess of the wire ties for all the wire ties used.

(f) Route 4-Flat wire harness on the exterior of the vehicle (Fig. 18-3 and Fig. 18-4).

(g) Attach 4-Flat Connector to L-shape bracket (Fig. 18-4 and Fig. 18-5).

⚠ NOTE: While routing the 4-Flat wire harness along the LH side of the tow hitch, care should be taken to ensure the harness is not in contact with the lower edge of the Body Lower Back Panel.

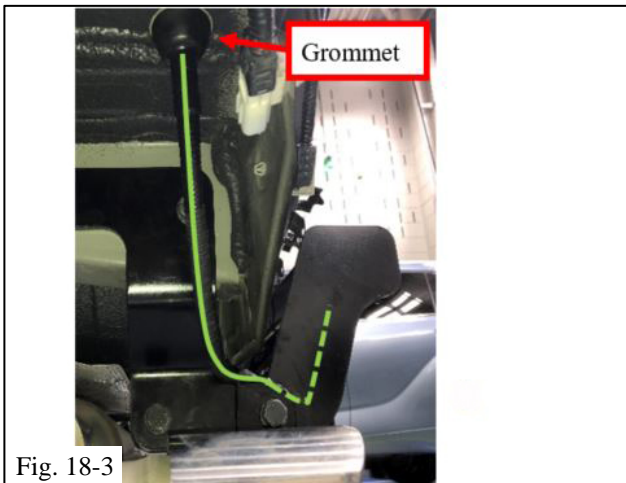


Fig. 18-3

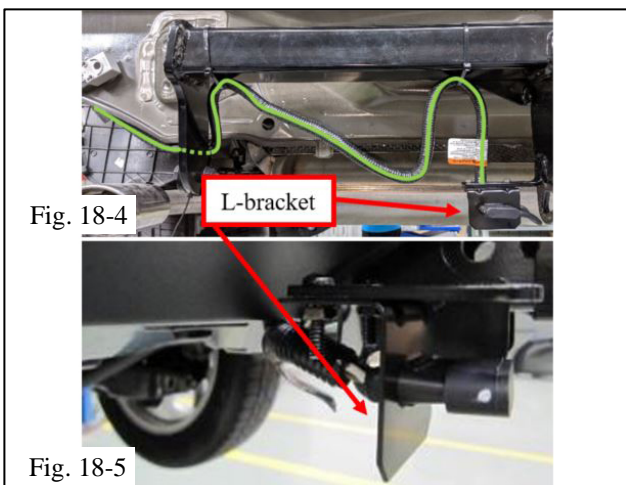


Fig. 18-4

Fig. 18-5

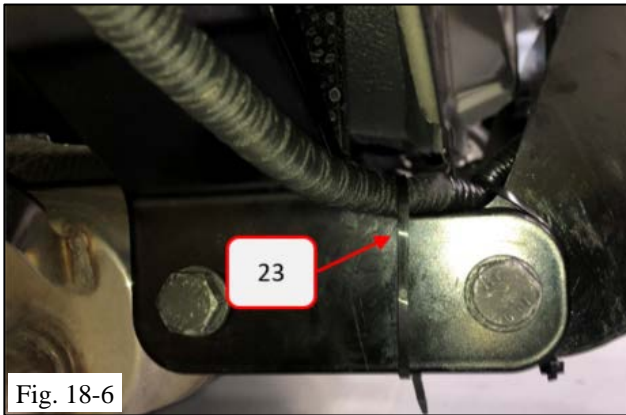


Fig. 18-6

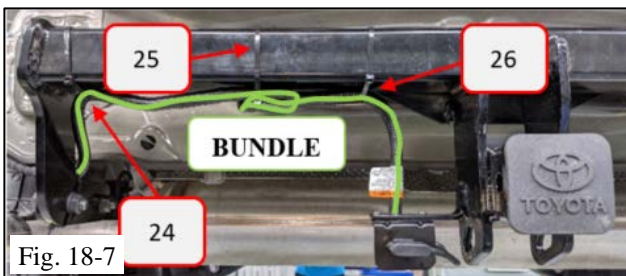


Fig. 18-7

- (h) Follow LH tow hitch bracket to secure Trailer 4-Flat Harness using Wire Tie 14” (Item #5 from Hardware Bag) as shown (Fig. 18-6).
- (i) Route Trailer 4-Flat Harness along hitch cross tube on the LH side. Secure the Trailer 4-Flat Harness with wire ties to the vehicle wire harness as shown.

⚠ NOTE: Bundle any excess wire harness (Fig. 18-7).


- (j) Clip the excess of wire ties for all wire ties used.

⚠ NOTE: While securing the 4-Flat wire harness to the tow hitch LH bracket, ensure that the harness is not in contact with the lower edge of the Body Lower Back, Panel.


⚠ NOTE: Loop and secure any excess of wire (Fig. 18-7).


⚠ NOTE: Refer to towing hitch installation instructions for reinstallation of Rear Bumper Assembly.

19. Complete the Installation

 **NOTE:** Please refer to repair manual for installation instructions if required.

- (a) Reinstall all vehicle components in reverse order of disassembly, from Section 1.

 **NOTE:** Be careful not to damage the rear seatback assembly LH, body exterior or interior parts.

 **NOTE:** For the RR backseat:

- (1) Attach the guide.
- (2) Install the rear seatback assembly RH with the 2 bolts in the order shown in the illustration.
- (3) Return the rear seatback assembly RH to vertical.

(4) Repeat on the LH side.

⚠ NOTE: Torque Backseat bolts for both back seats removed in Section 1.

S Torque RH Bolts (1) and (2): 36.8 N•m (27 lb•ft) (Fig. 19-1 and Fig. 19-2).

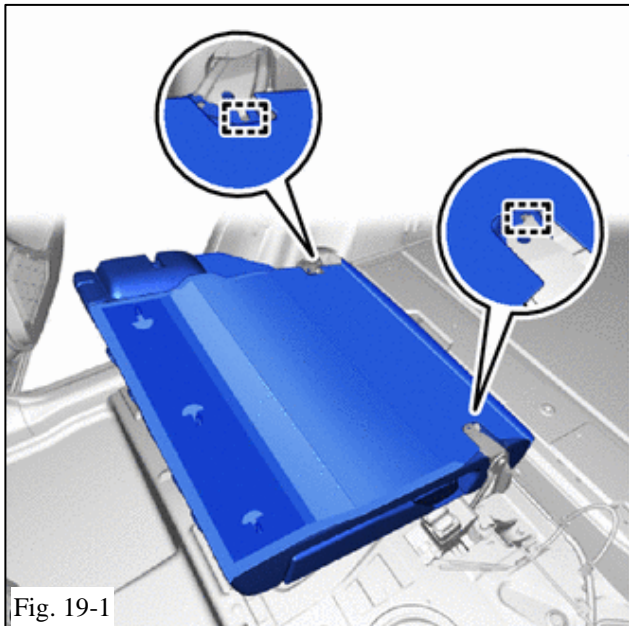


Fig. 19-1

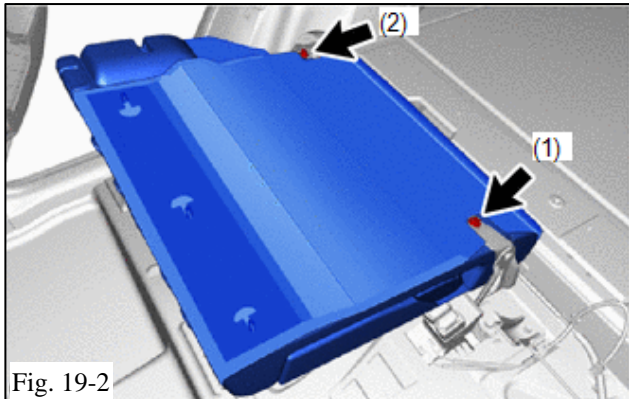
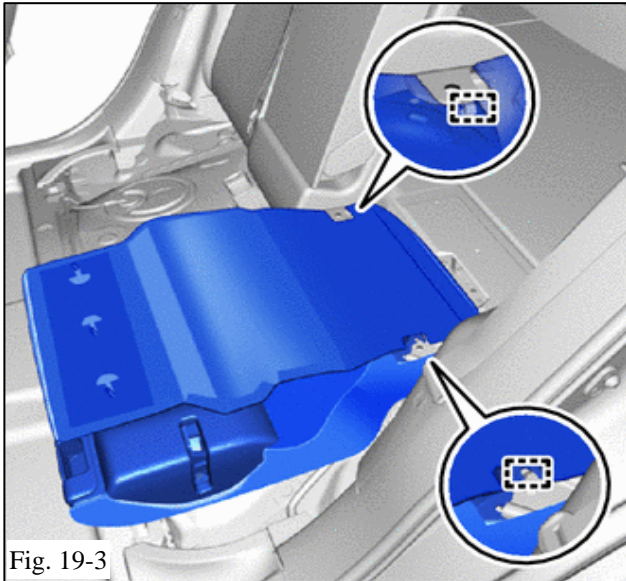
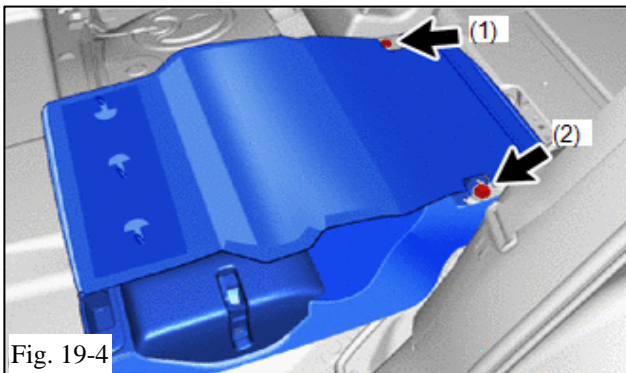


Fig. 19-2



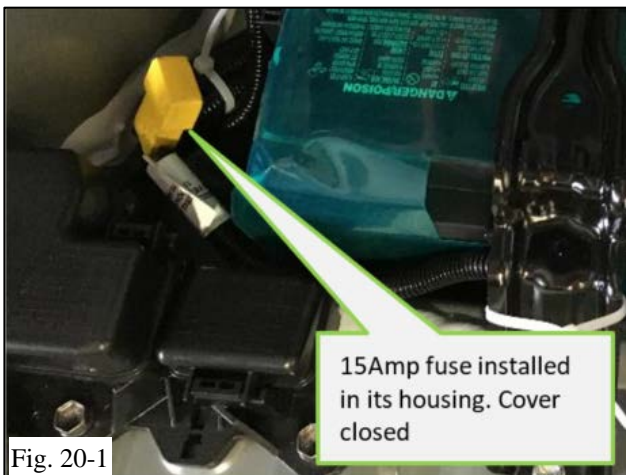
S Torque LH Bolts (1) and (2): 36.8 N•m (27 lb•ft) (Fig. 19-3 and Fig. 19-4).

- (1) Verify the RR seat belts on both LH and RH not to be twisted and work properly after deck lower trim side panel assembly (LH and RH) rear seat garnish (LH and RH) are reassembled.
- (2) Verify if the parts fit together with no uneven gaps between them.
- (3) Remove vehicle protective tape.




20. Install the 15Amp Fuse.


- (a) Install the 15Amp fuse into Trailer Power Wire Harness Fuse Housing. Close the fuse cover (Fig. 20-1).



21. Reinstall the Vehicle's Negative (-) Battery Terminal Cable to Battery.

 **Torque the battery terminal nut 5.0 N•m (44 in•lbf)**



 **NOTE:** Do not touch the positive terminal with any tool when installing the negative battery cable.

22. Store the Installation Instructions.

- (a) Place installation instructions and fuse location card with owner's manual in the glove box for future reference.

23. Perform a Functional Check.

- (a) Carry-out a functional check for the trailer wire harness and post-installation check for the vehicle. Refer to the attached check-list.

24. Perform a Parts Check.

- (a) Verify if the parts fit together with no uneven gaps between them.
- (b) Remove vehicle protective tape.



WARNING: Overloading circuit can cause fire.

DO NOT exceed load of towing manufacturer rating:

- **Max. stop/turn light: 2 bulbs per side (total 4.2 Amps).**
- **Max. tail lights: 7.5Amps**



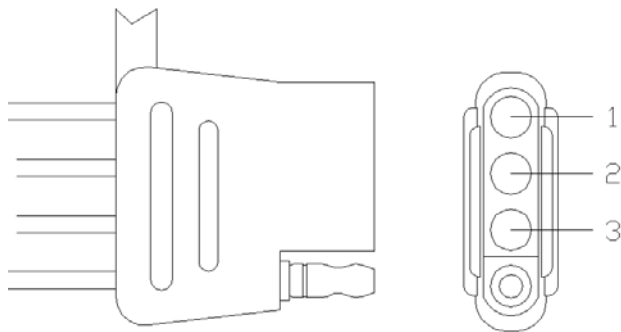
Read vehicle's owner's manual & instruction sheet for additional information.

Accessory Functional Check

Using Trailer Lights, Circuit tester or Multi-meter.

<ul style="list-style-type: none"> • Activate individual vehicle light functions 	<ul style="list-style-type: none"> • Verify that the corresponding functions activate the trailer 4-flat
Right Turn	Circuit 1*
Left Turn	Circuit 2*
Brake	Circuits 1 & 2
Tail light	Circuit 3
<ul style="list-style-type: none"> • Activate a combination of vehicle light functions simultaneously. 	<ul style="list-style-type: none"> • Verify that the corresponding functions activate the trailer 4-flat (color coded circuit)
Tail light & Brake	Circuit 1, 2 & 3
Left Turn & Brake	Circuit 1 & 2*
Right Turn & Brake	Circuit 1* & 2

*Flashes on and off when activated for turn circuit.



TOYOTA RAV4 HV 2019 - TRAILER WIRE HARNESS

Checklist - these points **MUST** be checked to ensure a quality installation.

<u>Check:</u>	<u>Look For:</u>
<p><u>Accessory Function Checks</u></p> <ul style="list-style-type: none"><input type="checkbox"/> Activate individual vehicle light functions. <input type="checkbox"/> Cargo light and power inverter<input type="checkbox"/> Warning Lights	<ul style="list-style-type: none"><input type="checkbox"/> Verify that the corresponding vehicle lights activate. If light does not activate then check the connection.<input type="checkbox"/> Functioning light and power inverter.<input type="checkbox"/> No presence of warning lights in the combination meter.
<p><u>Vehicle Function Check</u></p> <ul style="list-style-type: none"><input type="checkbox"/> No power to trailer light functions. <input type="checkbox"/> Corrosion on 4-Flat plug.	<ul style="list-style-type: none"><input type="checkbox"/> Check trailer wiring harness fuse per owner's manual fuse location card. <input type="checkbox"/> Check 4-flat connection between trailer and vehicle to make sure the connection is fully engaged. Turn all functions off and remove key for 10 seconds and retest functions with trailer attached. Turn all functions off and remove key for 10 seconds with trailer disengaged. Using a multi-meter check the function output at the 4-flat. If all functions work, check trailer for potential short or overload described in the owner's manual fuse location card.<input type="checkbox"/> Clean connection and add Dielectric Grease (sold separately) to the terminal pins.
<p><u>Vehicle Appearance Check</u></p> <ul style="list-style-type: none"><input type="checkbox"/> After accessory installation and removal of protective cover(s), perform a visual inspection.	<p>Ensure no damage (including scuffs and scratches) was caused during the installation process. (For PPO installations, refer to TMNA Accessory Quality Shipping Standard.)</p>