

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		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 8 mm
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 (Gas) Models

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)
TORX Socket Wrench	T30
Measuring Tape	
Socket	10, 12, and 14mm, 3/8" Drive
Special Chemicals	Notes
VDC Approved Cleaner	

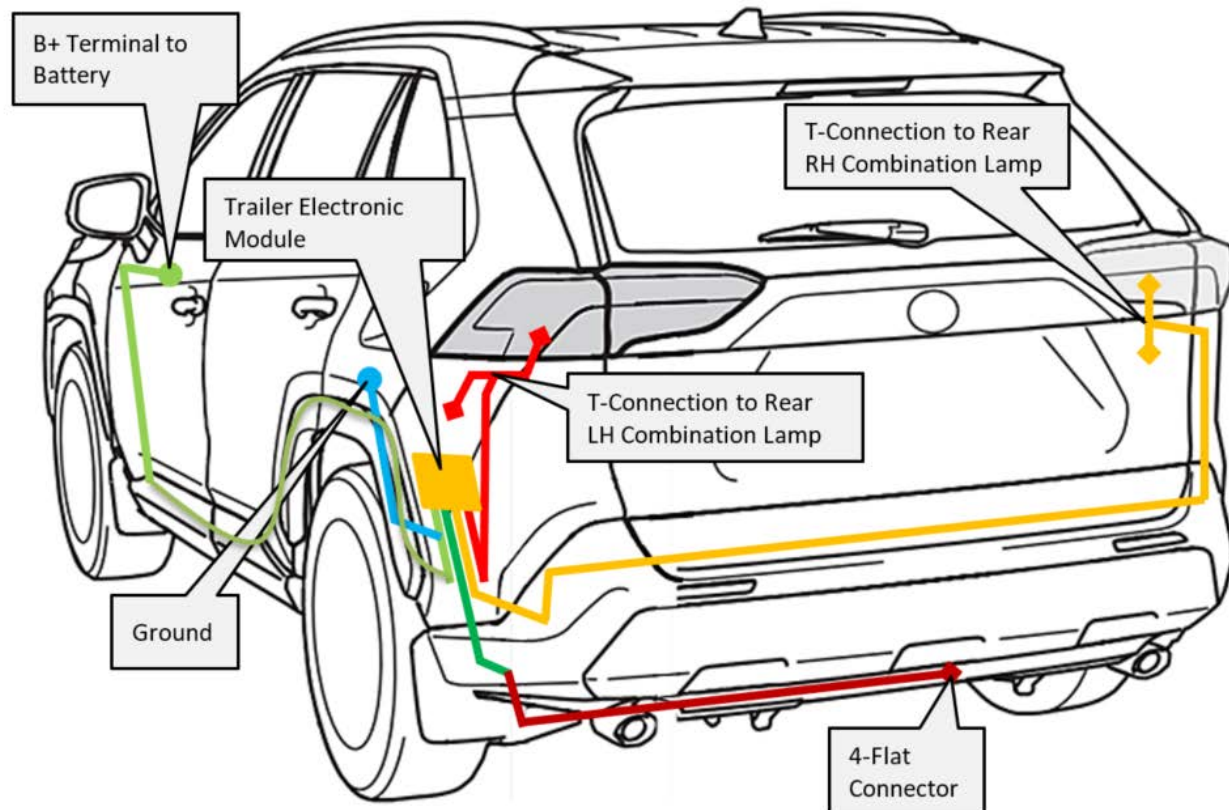
Vehicle Service Parts (may be required for reassembly)

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) Open the hood, tail gate, and side doors.

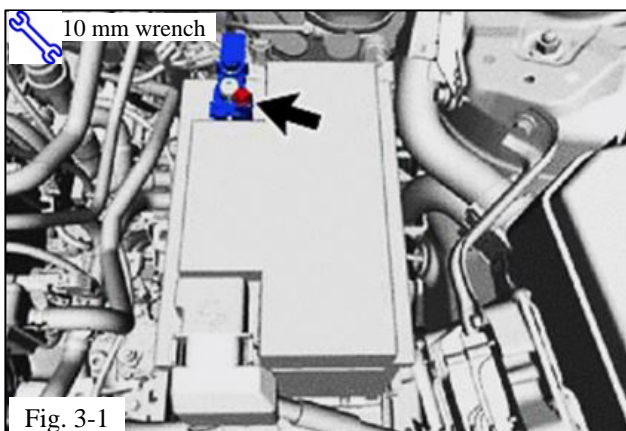
-  (c) Stop the windshield wiper motor assembly at the automatic stop position.

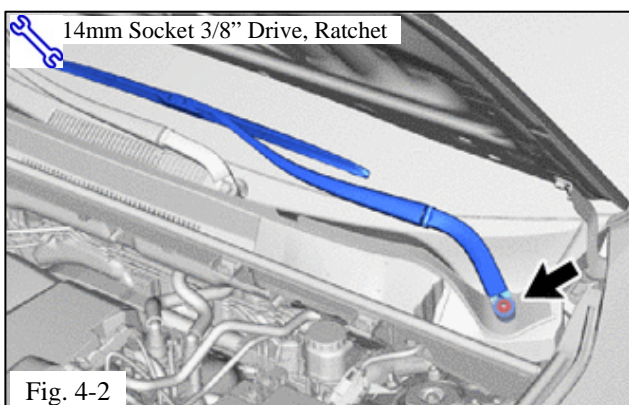
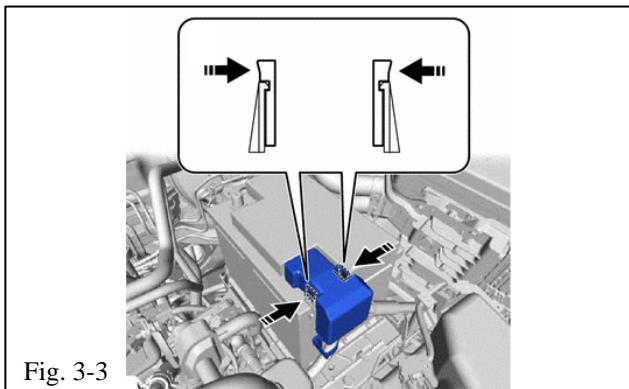
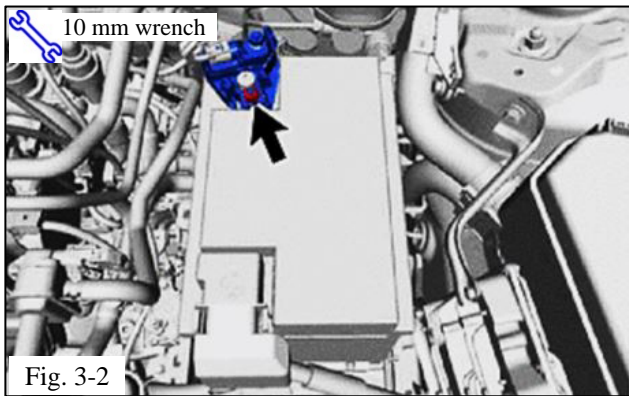
 **NOTE:** Use protective covers on the vehicle (particularly cover to both fenders and driver seat) to prevent damage to the vehicle.

 **NOTE:** Position the driver seat rearward prior to disconnecting the negative (-) battery terminal.

3. Locate the Battery on the FRT LH Side of the Vehicle.

- (a) Identify whether the vehicle is equipped with Stop and Start System.
- (b) If the vehicle is **NOT** equipped with Stop and Start System, reference Fig. 3-1 for negative (-) battery terminal location.





- (c) If the vehicle **IS** equipped with Stop and Start System, reference Fig. 3-2 for negative (-) battery terminal location.
- (d) Disconnect the negative (-) battery terminal from the battery using a 10mm wrench and isolate the negative battery terminal.
- (e) Insulate the negative battery cable (-) terminal immediately using insulating tape.
- (f) Detach the 2 claws and remove the Connector Cover from the Positive (+) battery terminal (Fig. 3-3).

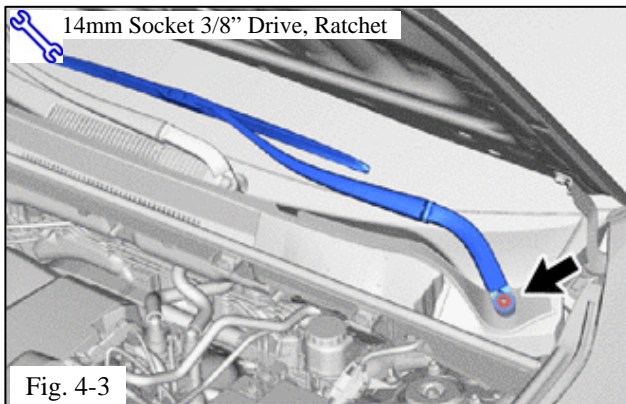
4. Remove the Windshield Wiper Arm and Blade Assemblies.

- (a) Using a thin-bladed screwdriver with its tip wrapped with protective tape, detach the claw and remove the front wiper arm head cap (Fig. 4-1).
- (b) Retain the wiper arm head caps.

- (c) Remove the nut and the windshield wiper arm and blade assembly LH (Fig. 4-2).

⚠ NOTE: Repeat the process for the RH side.

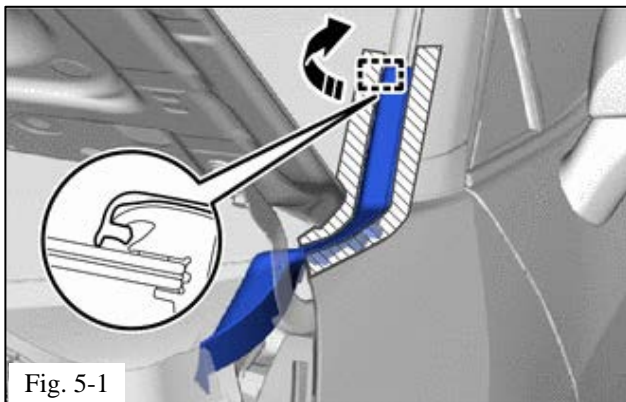
⚠ NOTE: Retain the fasteners and wiper arm and blade assemblies.



(d) Repeat Step 4(c) on the RH side (Fig. 4-3).

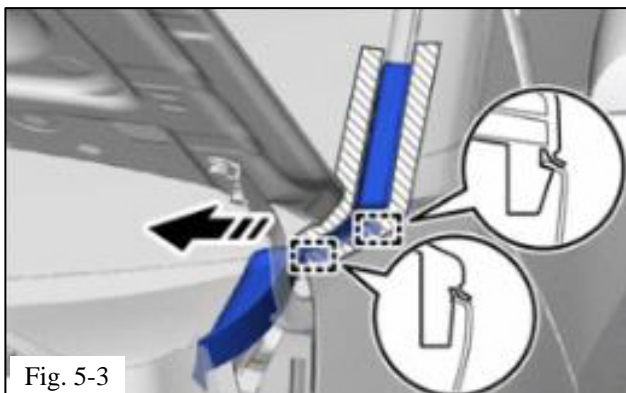
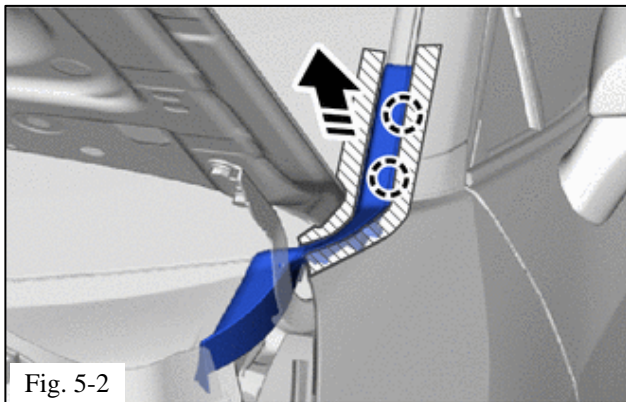
5. Remove the Front Fender to Cowl Side Seal LH.

(a) Put protective tape around the front fender to cowl side seal LH (Fig. 5-1).

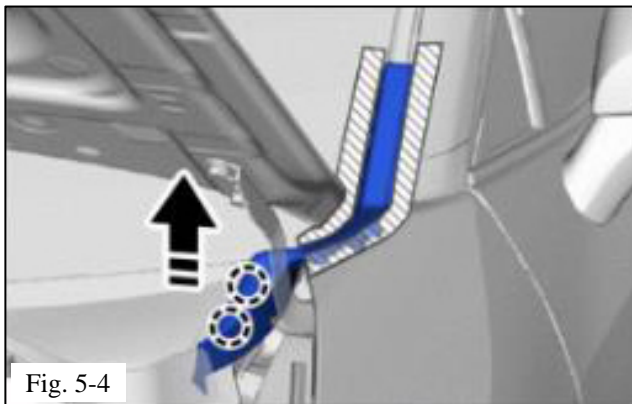


(b) Detach the guide and claws as shown in the illustration (Fig. 5-2).

⚠ NOTE: If removed using tools, the claw of the front fender to cowl side seal LH may be deformed. Detach the claws by hand in the direction of the arrow (Fig. 5-2).



(c) Detach the guides (Fig. 5-3).



(d) Detach the claws as shown (Fig. 5-4).

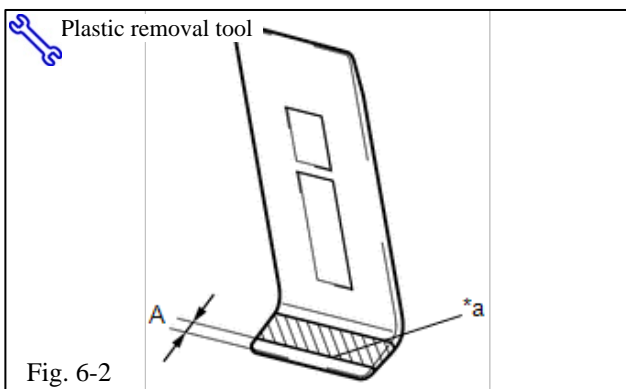
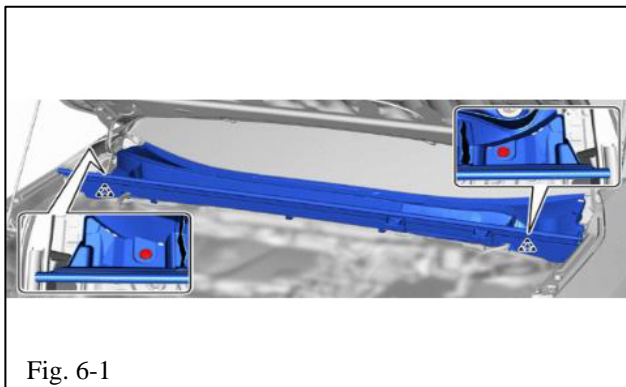
(e) Remove the front fender to cowl side seal LH in the direction indicated by the arrow as shown (Fig. 5-4).

NOTE: Retain the removed parts. Process shown on the LH. Repeat step 5 (a) – (e) on the RH.

6. Remove the Cowl Top Ventilator Louver Sub-Assembly.

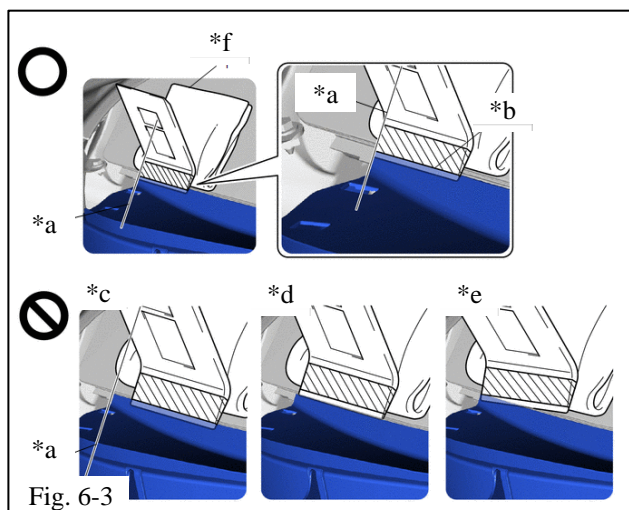
NOTE: To prevent damage to the windshield glass, remove any foreign matter (sand, dust, etc.) from around the contacting surfaces of the cowl top ventilator louver sub-assembly and windshield glass.

(a) Remove the 2 clips (Fig. 6-1).



(b) Apply protective tape to the plastic trim removal tool (Fig. 6-2).

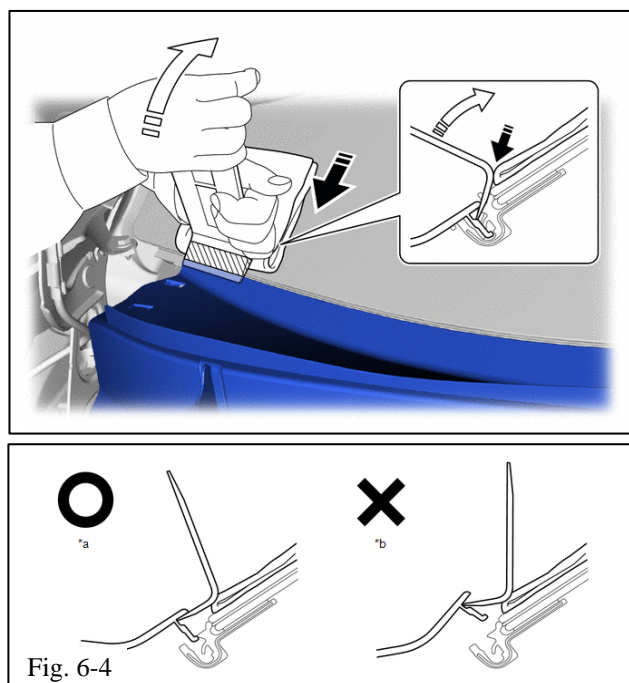
Application Location: *a= Edge of protective tape and dimension A is 4.0mm (0.157 in.)



*a	Starting Position: Side of Cowl Top Ventilator Louwer Sub-assembly and Moulding Remover Aligned	*b	Inserted to Edge of Protective Tape
*c	Not Inserted at Starting Position	*d	Not Inserted to Edge of Protective Tape
*e	Not Inserted Straight	*f	Piece of Cloth or Equivalent
	Protective Tape	-	-

(c) Insert the plastic trim molding remover at the starting position until the edge of the protective tape is aligned with the cowl top ventilator louver sub-assembly (Fig. 6-3).

NOTE: To prevent damage to the windshield glass, set a piece of cloth (*f) in the table on Fig. 6-3, between the molding remover and windshield glass (Fig. 6-3).



(d) While pushing the molding remover in the direction indicated by the arrow (A – black arrow), push the molding remover in the direction indicated by the arrow (B – white arrow) to disengage the cowl top ventilator louver sub-assembly (Fig. 6-4).

NOTE: Figure 6-4 exemplifies the “O” condition, pried until disengaged and the “X” condition, pried excessively.

NOTE: Make sure to insert the molding remover until the edge of protective tape is aligned with the cowl top ventilator louver sub-assembly, otherwise the cowl top ventilator louver sub-assembly may be deformed or damaged (Fig. 6-4).

NOTE: Make sure to repeat this procedure to disengage the entire cowl top ventilator louver sub-assembly.

NOTE: Make sure to perform this procedure while pushing the molding remover in the direction indicated by the arrow A (black arrow) (Fig. 6-4), otherwise the cowl top ventilator louver sub-assembly may be deformed or damaged.

NOTE: Make sure not to pry the cowl top ventilator louver sub-assembly more than necessary to disengage it, otherwise it may be deformed or damaged.

(e) Using the molding remover, repeatedly pry up the cowl top ventilator louver sub-assembly while gradually moving the molding remover half of its width laterally toward the center of the vehicle and then repeat the procedure from the other side of the vehicle as shown in the illustration (Fig. 6-5) to disengage the cowl top ventilator louver sub-assembly from the windshield glass.

NOTE: Make sure to move the molding remover only half of its width laterally after prying up the cowl top ventilator louver sub-assembly (Fig. 6-5), otherwise the cowl top ventilator louver sub-assembly may be damaged or deformed.

NOTE: Make sure not to lift up or pull the cowl top ventilator louver sub-assembly by hand before it is completely disengaged, otherwise it may be deformed or damaged.

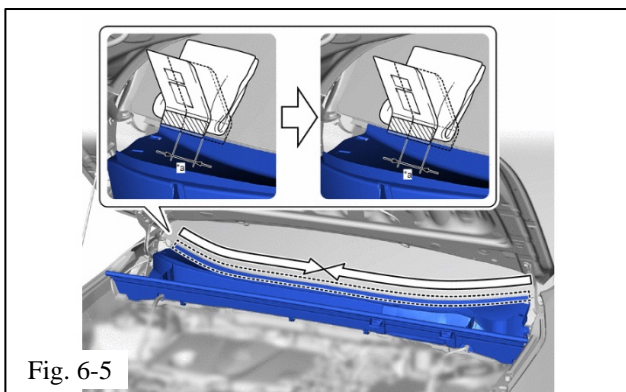
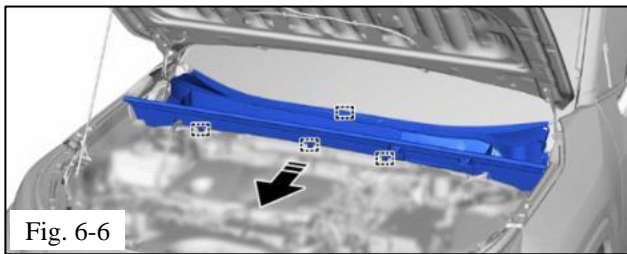
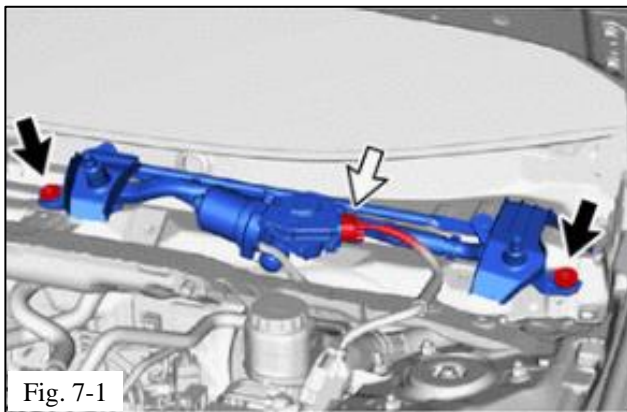


Fig. 6-5

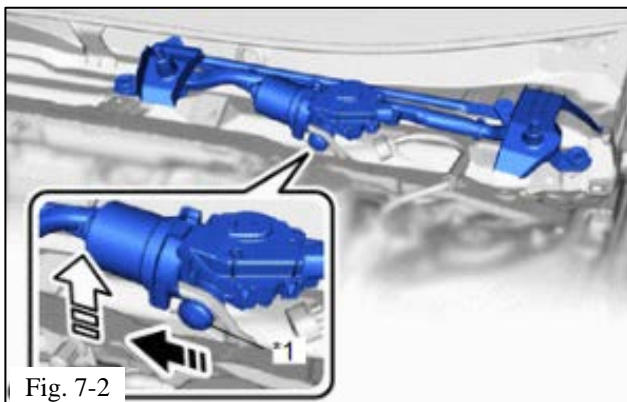


- (f) Detach the guide and remove the cowl top ventilator louver sub-assembly as shown (Fig. 6-6). Direction of removal is shown in with black arrow.

7. Remove the Windshield Wiper Motor and Link Assembly.



- (a) Disconnect the connector – identified with white arrow (Fig. 7-1).
(b) Remove the 2 bolts – identified with black arrows (Fig. 7-1). Retain the bolts.

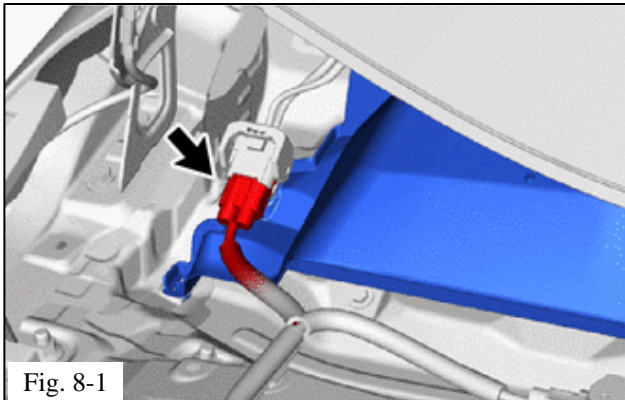


- (c) Detach the motor grommet as shown (Fig. 7-2).
(d) Remove the windshield wiper motor and link assembly as shown (Fig. 7-2), first in the direction of the black arrow then in the direction of the white arrow (Fig. 7-2).
(e) Retain the windshield wiper motor and link assembly.

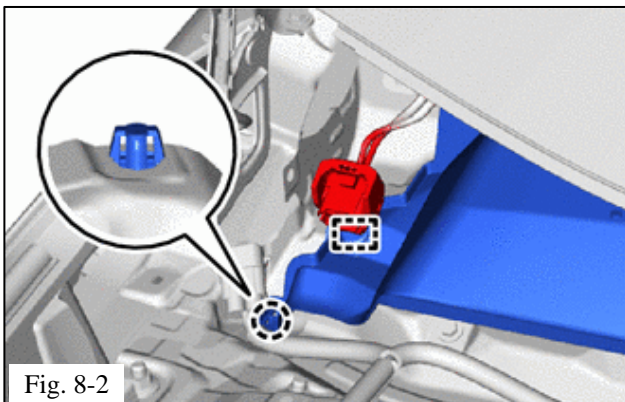
⚠ NOTE: Do not damage the vehicle with the front wiper motor and link assembly.

8. Remove the Cowl Ventilator Splash Shield

(a) Disconnect the connector (Fig. 8-1).



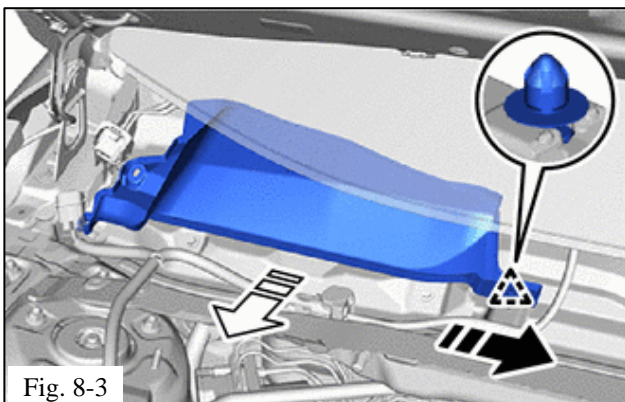
(b) Detach the clamp and claw (Fig. 8-2).

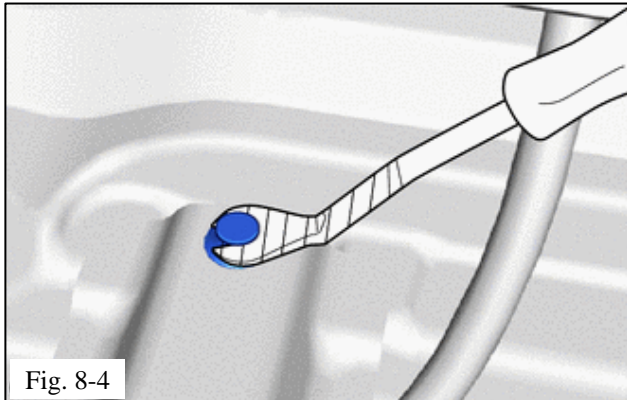


(c) Pull the cowl ventilator splash shield in the direction of the black arrow and then in the direction of the white arrow as indicated (Fig. 8-3) to detach the clip.

(d) Pull out the cowl ventilator splash shield.

(e) Using a clip remover with its tip wrapped with protective tape, detach the clip remaining on the vehicle and remove the cowl ventilator splash shield.





(f) Retain the part and the fastener.

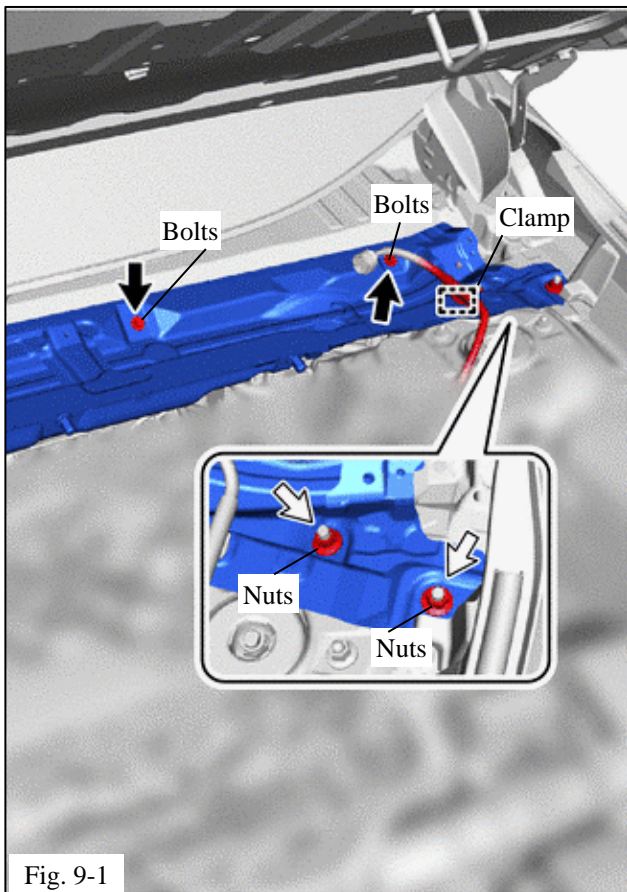
NOTE: If the clip becomes disengaged from its housing, reinsert it in the housing (Fig. 8-4).

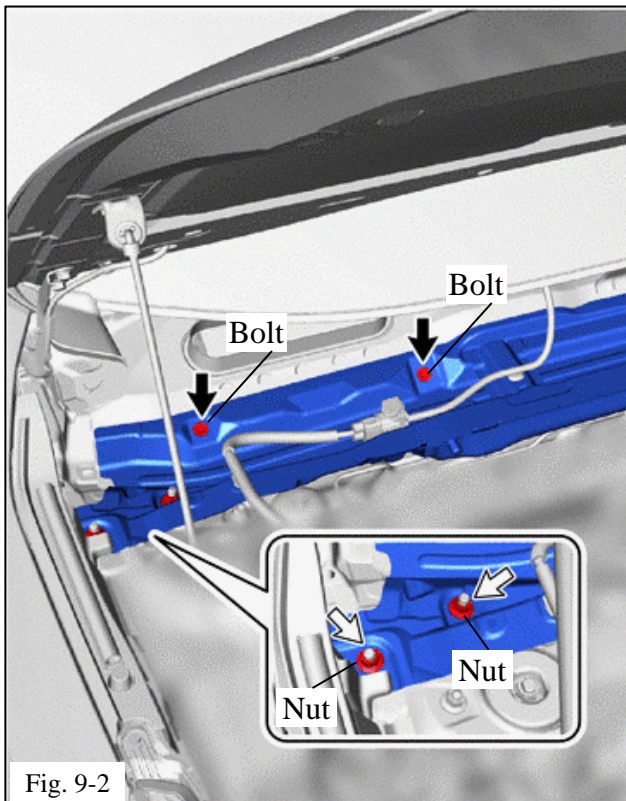
9. Remove the Cowl Ventilator Panel Sub-assembly.

(a) Identify if the vehicle has a windshield deicer system.

(b) If the vehicle has a windshield deicer system, disconnect the connector identified with a white arrow (Fig. 9-1).

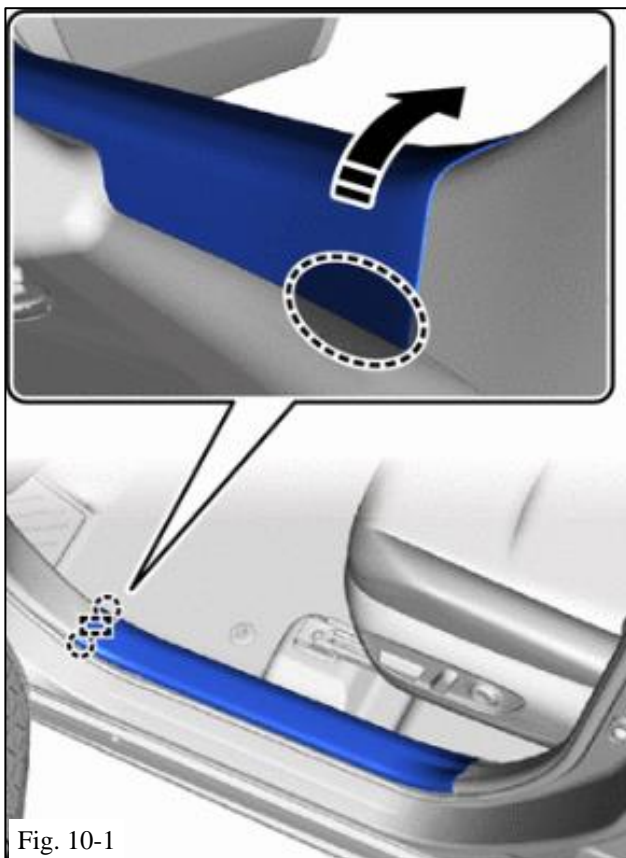
(c) On the LH side, remove the 2 bolts (identified with black arrows), 2 nuts and 1 clamp (Fig. 9-1).



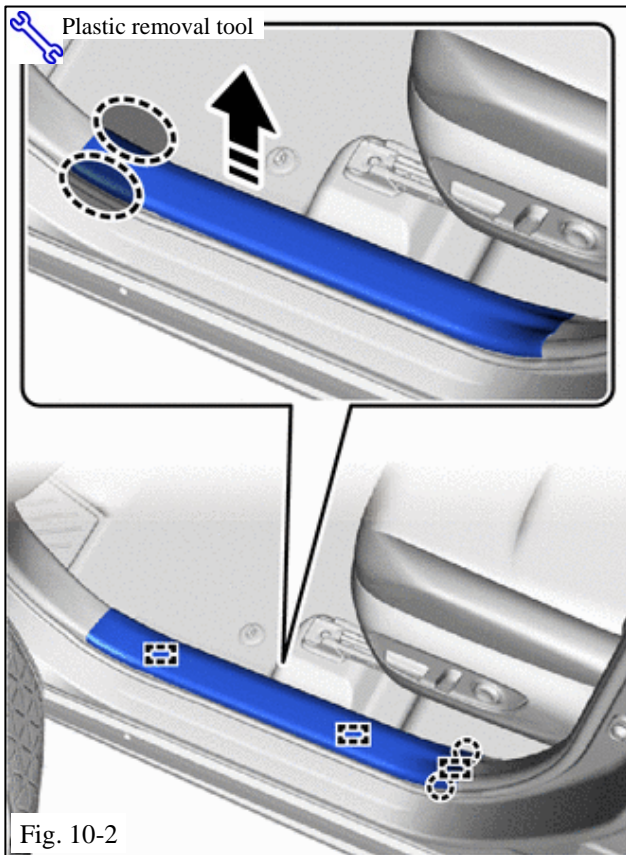


- (d) On the RH side, remove the 2 bolts, and 2 nuts (Fig. 9-2).
- (e) Disconnect all other wire harness connectors.
- (f) Remove the cowl ventilator panel sub-assembly.
- (g) Retain the part and fastener.

10. Remove the Front Door Scuff Plate LH:



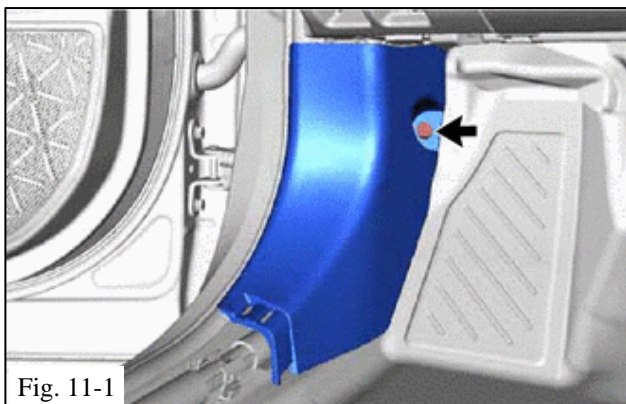
- (a) Disengage the 4 snaps and 4 clips (Fig. 10-1 and Fig. 10-2) and remove the front door scuff plate LH.
- (b) Positioned in the vehicle interior, place your hand at the position shown and pull in the removal direction to detach the claw and guide.



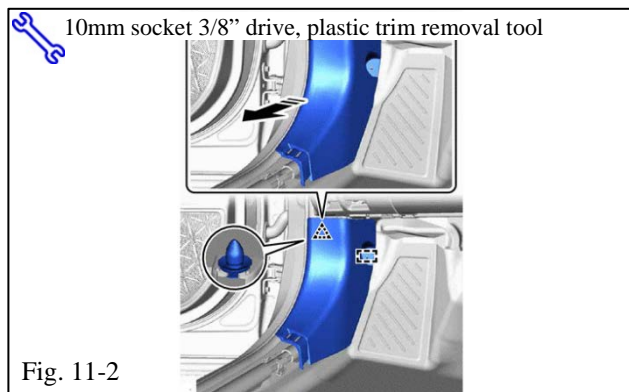
(c) Lift in the direction indicated by the arrow (Fig. 10-2) to detach the clamp and claw and remove the front door scuff plate LH.

(d) Retain the part.

11. Remove the Cowl Side Trim Board LH.



(a) Remove the cap nut shown in red and indicated by the black arrow (Fig. 11-1).



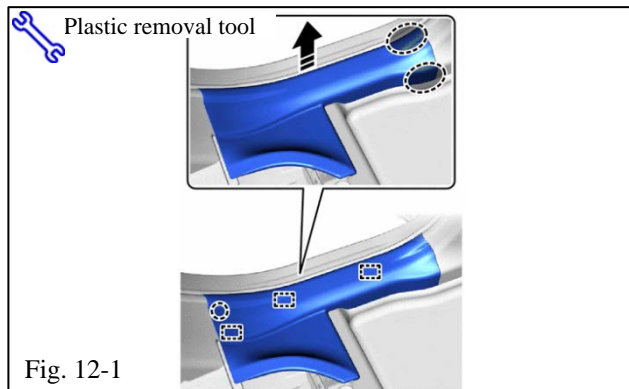
(b) Detach the clip and guide and remove the cowl side trim board LH (Fig. 11-2).

(c) Retain the cowl side trim board LH.



(d) NOTE: Temporarily reconnect the negative battery terminal, move the driver seat forward and then disconnect the negative terminal.

12. Remove the Right Rear Door Scuff Plate LH.



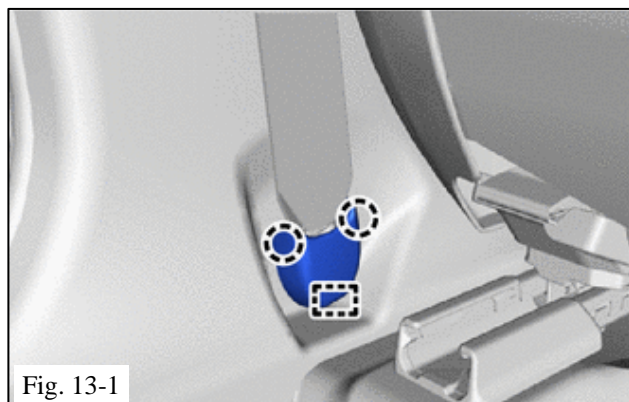
(a) Place your hand at the position shown and pull in the removal direction shown by the arrow to detach the claw and guide (Fig. 12-1).

(b) Disengage the 3 claws and 1 guide and remove the RR door scuff plate LH (Fig. 12-1).

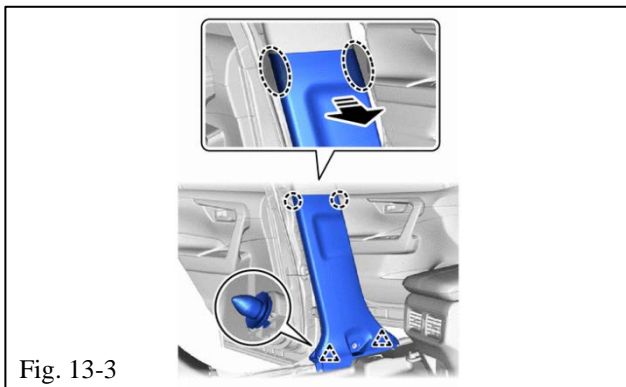
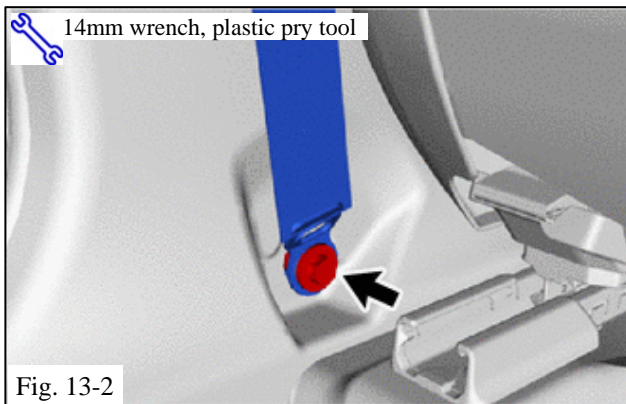
(c) Lift in the direction indicated by the arrow to detach the clamp and claw and remove the RR door scuff plate LH.

(d) Retain the part.

13. Remove the Center Pillar Lower Garnish LH



(a) Remove the seat belt bolt cover (Fig. 13-1).



(b) Remove the bolt, using 14mm wrench (Fig. 13-2) indicated by black arrow.

(c) Retain the cover and retain the bolt.

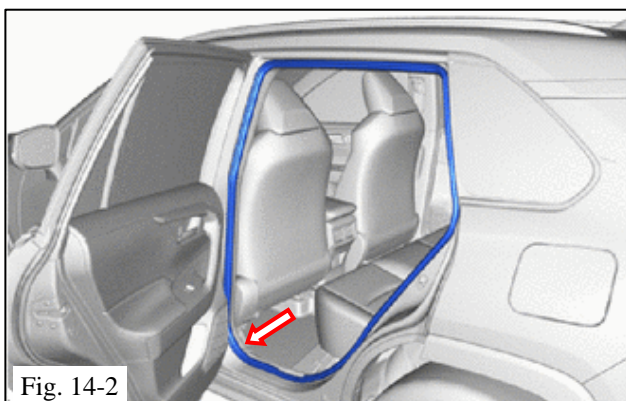
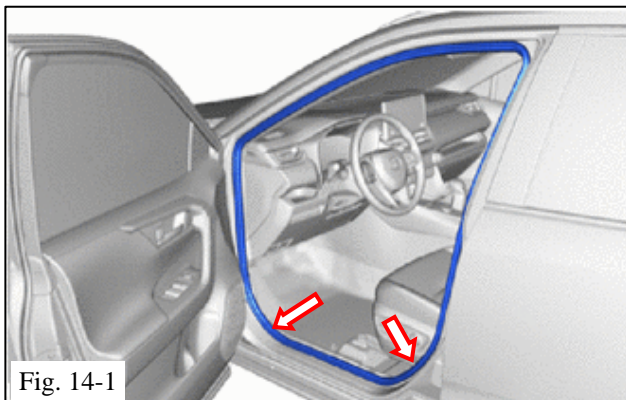
(d) Disengage the 2 claws and 2 push pins, and remove the center pillar lower garnish LH (Fig. 13-3).



NOTE: Temporarily reconnect the negative battery terminal, move the driver seat rearward and then disconnect the negative terminal.

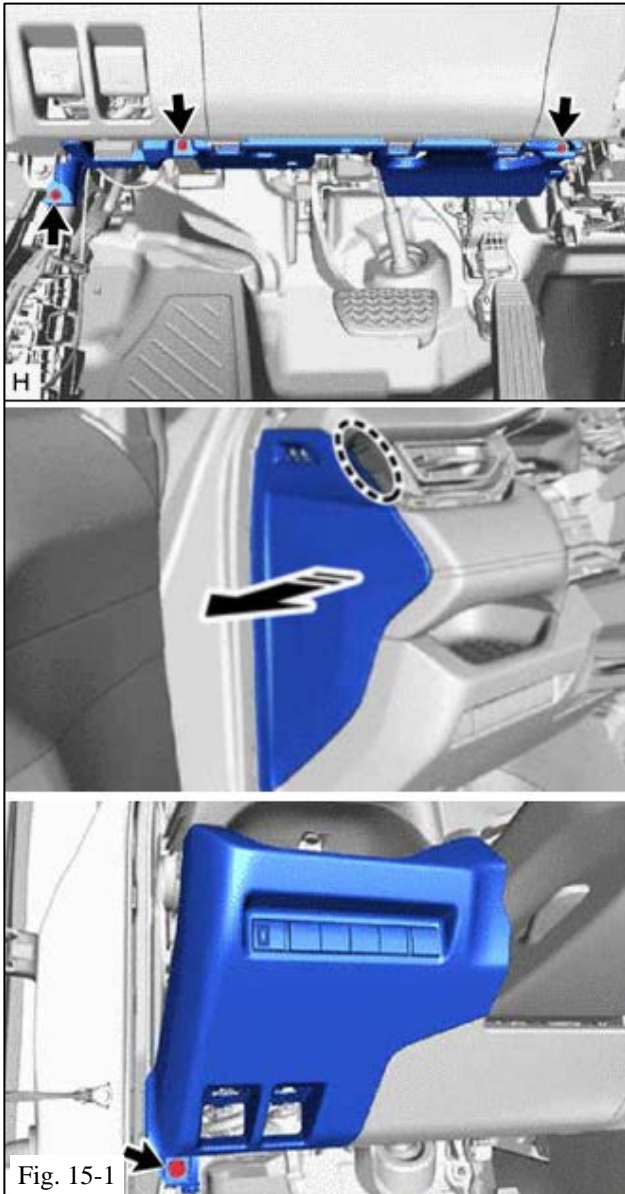
14. Partially Remove the Lower Corners of the Weatherstrips.

(a) Partially remove the lower corners of the weather strips from FRT and RR door LH opening at the vehicle A-pillar and B-pillar as shown with arrows (Fig. 14-1 & 14-2).



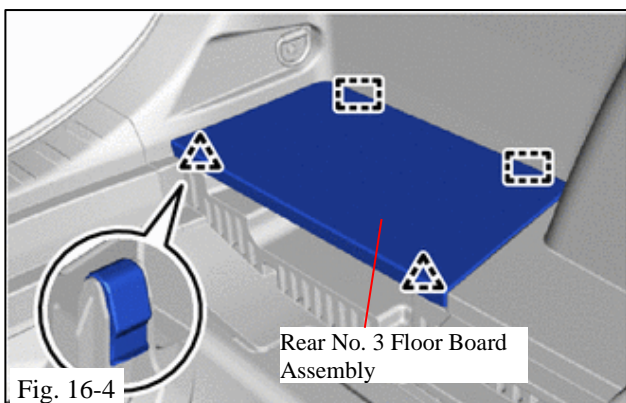
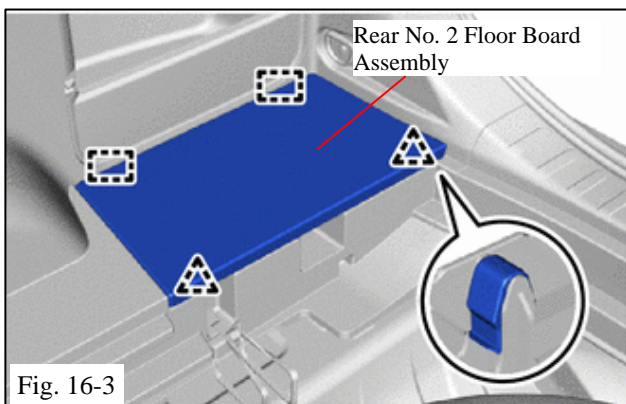
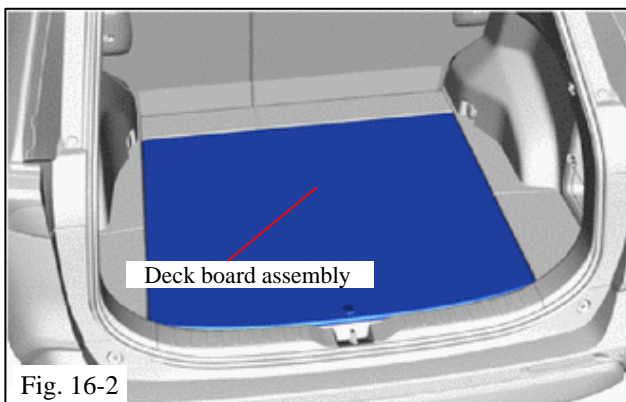
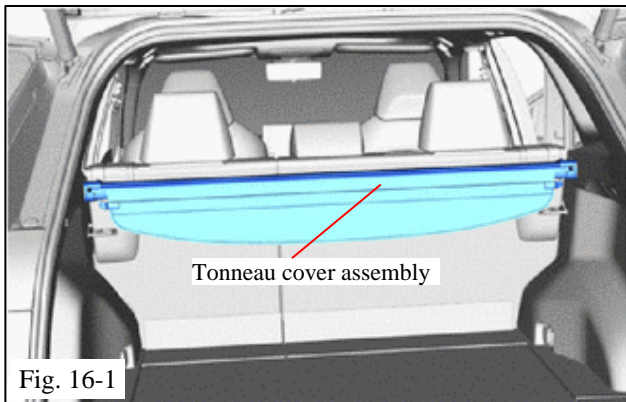
15. Remove the I/P Trim Panels

- (a) Remove No. 1 instrument panel under cover (3 screws) and disconnect the DLC3 and foot light (if equipped) (Fig. 15-1).
- (b) Remove LH side instrument panel (5 clips).
- (c) Partially remove the fuse box opening cover (1 bolt and 7 clips). Disconnect hood release and fuel filler door release if needed.



16. Remove the RR Interior Trim Panels.

- (a) Remove the tonneau cover assembly (Fig. 16-1) and deck board assembly (Fig. 16-2).
- (b) Place the parts in a place they will be not damaged or destroyed.



- (c) Detach the clips and guides and remove the Rear No. 2 floor board (on RH) (Fig. 16-3) as well Rear No. 3 Floor Board (on LH) (Fig. 16-4).
- (d) Place parts in a place where they will not be damaged or destroyed.

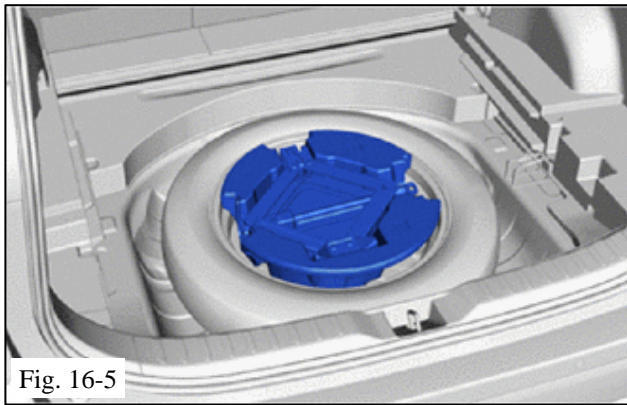


Fig. 16-5

- (e) Disengage and lift the Spare Wheel Cover Stopper (Fig. 16-5).
- (f) Remove the spare wheel.
- (g) Retain the parts and the fasteners.

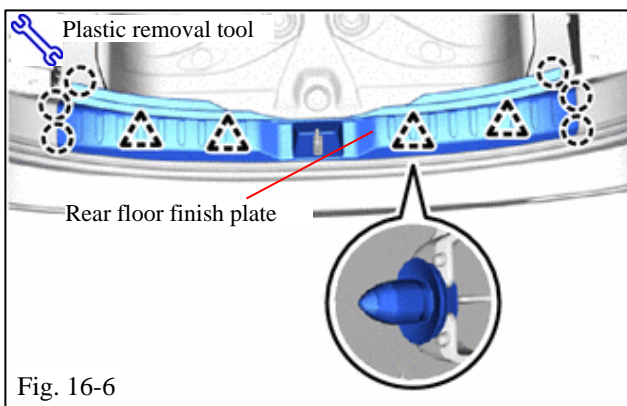


Fig. 16-6

- (h) Detach the claw and clip and remove the rear floor finish plate (Fig. 16-6).
- (i) Retain the part.

17. Remove the Plastic Trim Panel

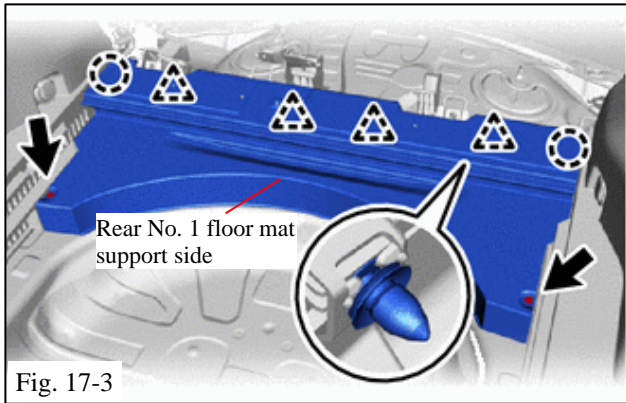


Fig. 17-1



Fig. 17-2

- (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. 17-1 and respectively Fig. 17-2). Detach the clips and fold the flap on the backseats.



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

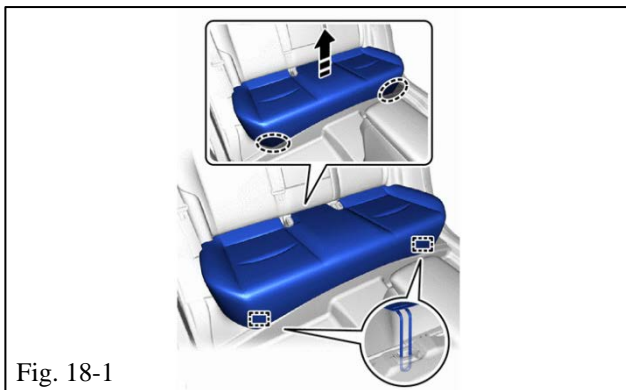
(1) Remove the 2 screws identified with black arrows (Fig. 17-3).

(2) Detach the clips and claws.

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

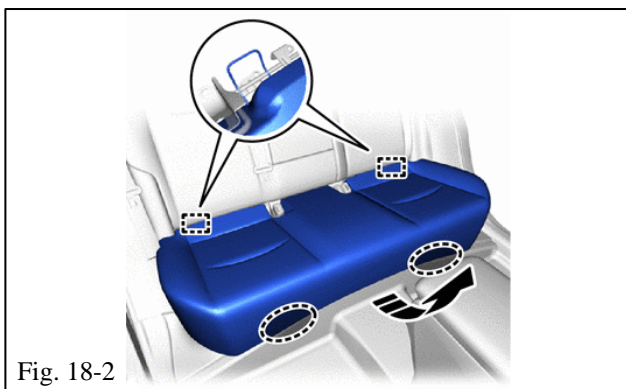
(4) Retain the part.

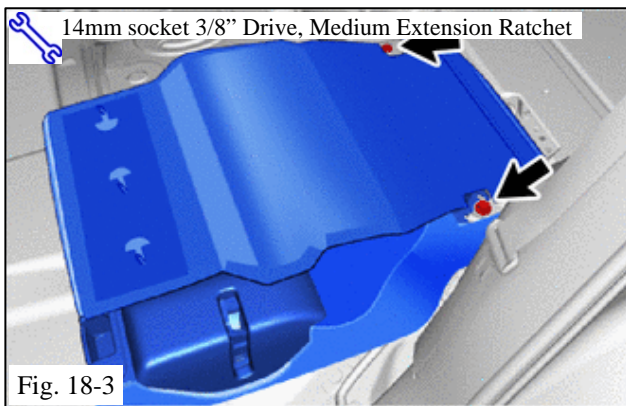
18. Remove the RR Bench and the RR Backseats



(a) Hold (Fig. 18-1) and lift in direction of arrow and un-snap, disengaging the RR Bench. The RR Bench is held in place by 2 snaps in the front of the part and 2 claws in the rear of the part beneath the back seat (Fig. 18-1 & Fig. 18-2).

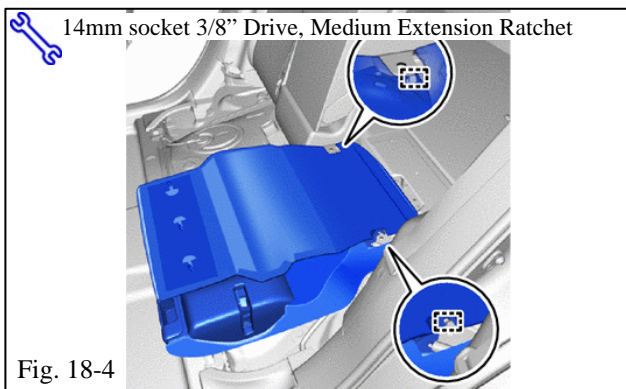
(b) Place the rear bench seat in a place where it will not get dirty or damaged.





(c) With the Rear Seatback Assembly LH folded forward (Fig. 18-3).

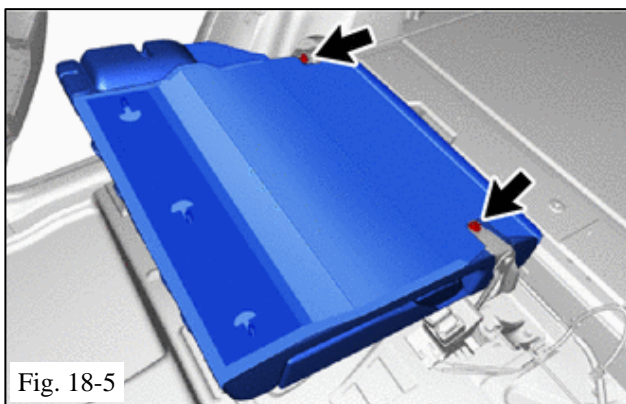
(d) Remove the 2 bolts (Fig. 18-3).



(e) Detach the guide and remove the rear seatback assembly LH (Fig. 18-4).

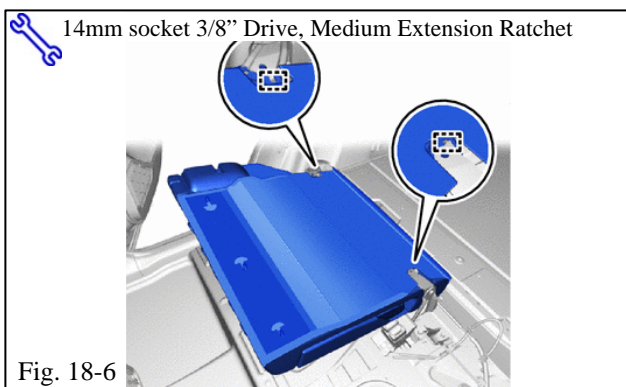
NOTE: Be careful not to damage the Rear Seatback Assembly LH, vehicle body exterior or interior parts.

(f) Retain the parts and retain the bolts.



(g) With the Rear Seatback Assembly RH folded forward (Fig. 18-5).

(h) Remove the 2 bolts (Fig. 18-5).



(i) Detach the guide and remove the rear seatback assembly RH (Fig. 18-6).

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

(j) Retain the parts and the bolts.

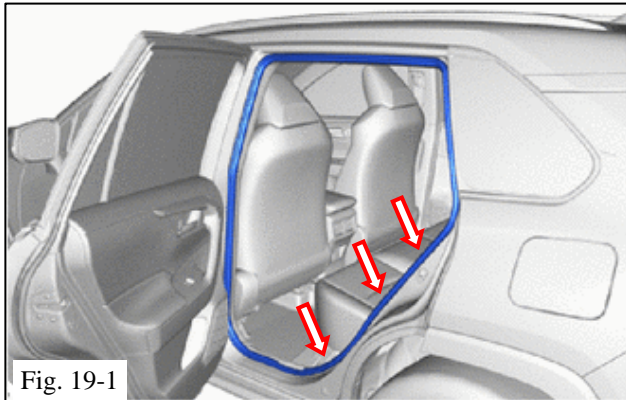


Fig. 19-1

19. Partially Remove the Door Weatherstripping

- (a) Partially remove Weather Strip in RR door openings LH and RH along C-Pillar trim (Fig. 19-1).

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

⚠ NOTE: Vehicle shown for reference purposes only. At this stage the RR bench assembly and the RR backseat assembly are removed as described in previous steps.

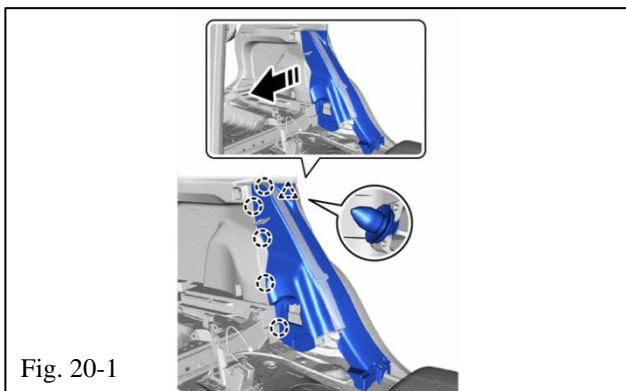


Fig. 20-1

20. Disengage the Rear Seat LH Garnish

- (a) Disengage the Rear Seat LH Garnish by hand, and releasing the 5 snaps (Fig. 20-1).
- (b) Remove in the direction of the arrow (top medallion).
- (c) Retain the part.

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

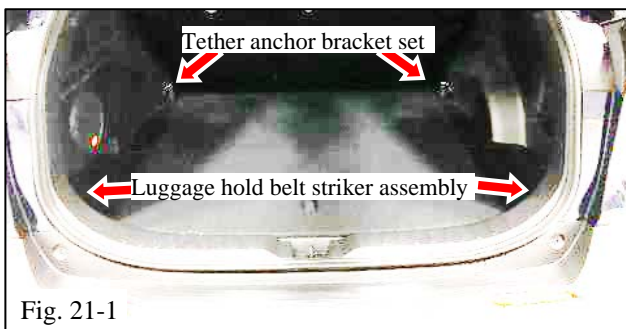
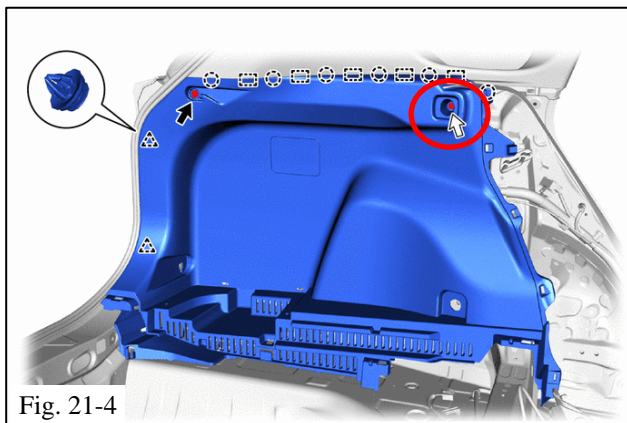
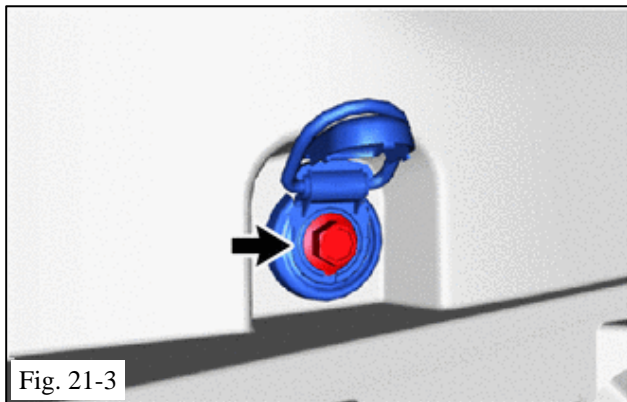
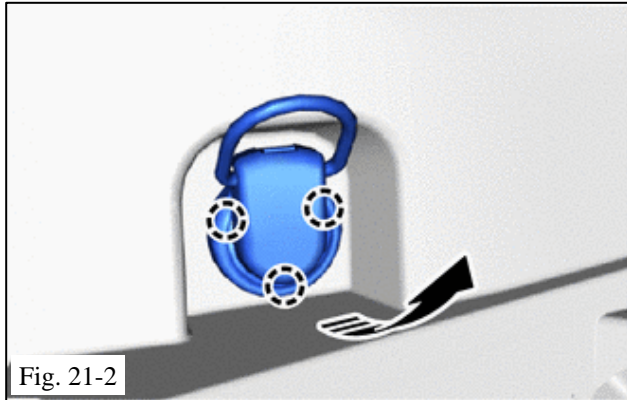


Fig. 21-1

21. 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. 21-1).



(b) Remove the tether anchor bracket set.

(1) Detach the claws and turn the cover up as shown by the arrow (Fig. 21-2).

(2) Loosen the bolt and remove the tether anchor bracket set (Fig. 21-3).

(3) Repeat the process on the RH side.

(4) Retain the fasteners and the parts.

(c) Remove the deck lower trim side panel assembly LH.

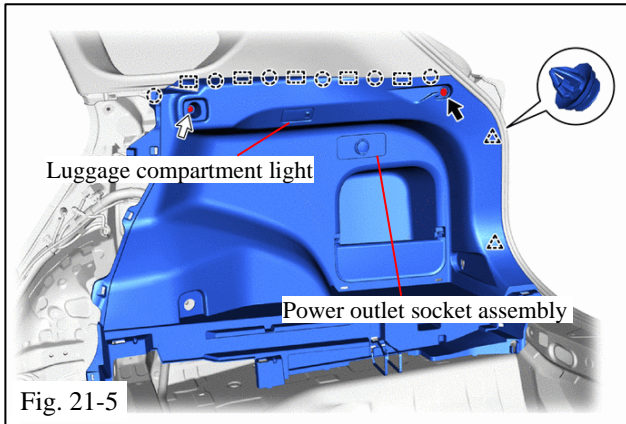
(1) Remove the clip indicated with a black arrow (Fig. 21-4).

(2) Remove the clips (Fig. 21-4).

(3) **Except "TORX" Screw:** Remove the screw (Fig. 21-4 identified with white arrows).

(4) **For "TORX" Screw:** Using a T30 "TORX" socket wrench, remove the "TORX" screw (Fig. 21-4 identified with white arrows).

(5) Detach the clips, claws and guides on top of the part between deck lower trim side panel assembly and deck upper trim side panel assembly.



(d) Remove deck lower trim side panel assembly RH.

(1) Remove the clip indicated with black arrow (Fig. 21-5).

(2) Remove the clips.

(3) **Except "TORX" Screw:** Remove the screw (Fig. 21-5 identified with white arrows).

(4) **For "TORX" Screw:** Using a T30 "TORX" socket wrench, remove the "TORX" screw (Fig. 21-5 identified with white arrows).

(5) Detach the clips, claws and guides on top of the part between RH deck lower trim side panel assembly and RH deck upper trim side panel assembly.

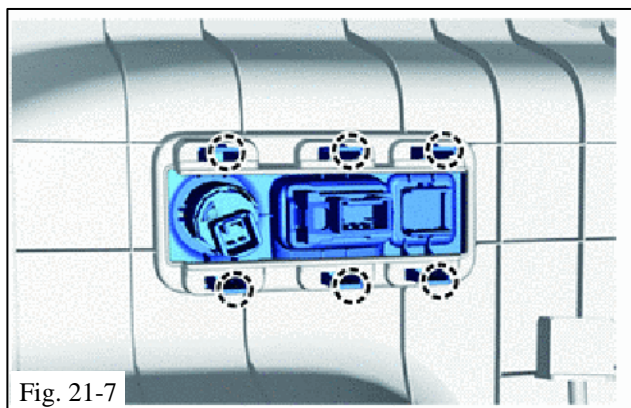
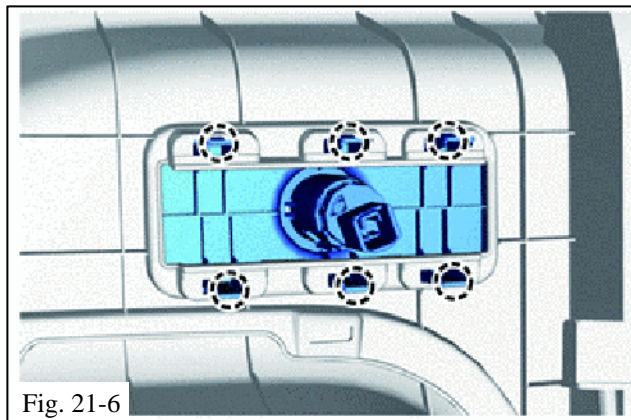
(e) Locate and identify the RH deck lower trim side panel assembly.

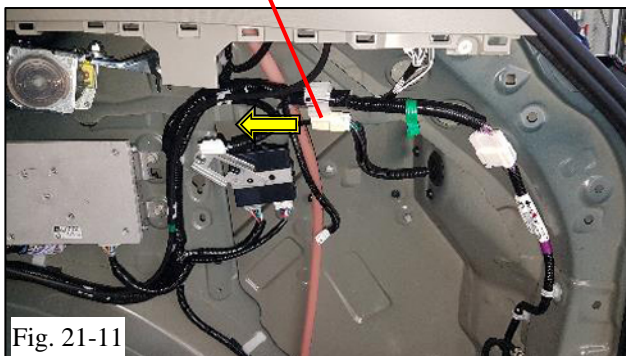
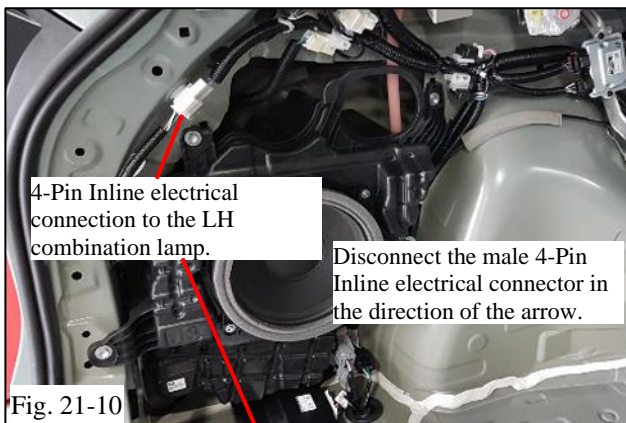
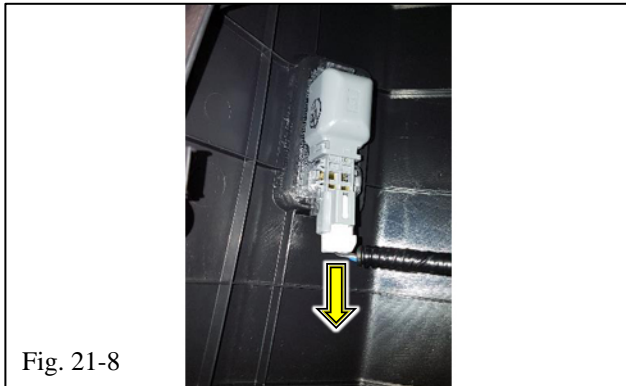
(1) Luggage compartment light assembly (Fig. 21-5).

(2) Power outlet socket assembly. Looking on the back of the RH deck lower trim side panel assembly (Fig. 21-5):

(1) w/o Voltage Inverter Fig. 21-6.

(2) w/ Voltage Inverter Fig. 21-7.





(f) Disconnect in the direction of the arrow.

(1) Luggage Compartment Light Assembly connector (Fig. 21-8).

(2) Power outlet socket assembly connector, at locations shown in Fig. 21-8 or Fig. 21-9.

(3) Power outlet socket assembly w/o Voltage Inverter is exemplified in Fig. 21-9.

(4) Retain the RH Deck Lower Trim Side Panel Assembly and place it in a place where will not be damaged.

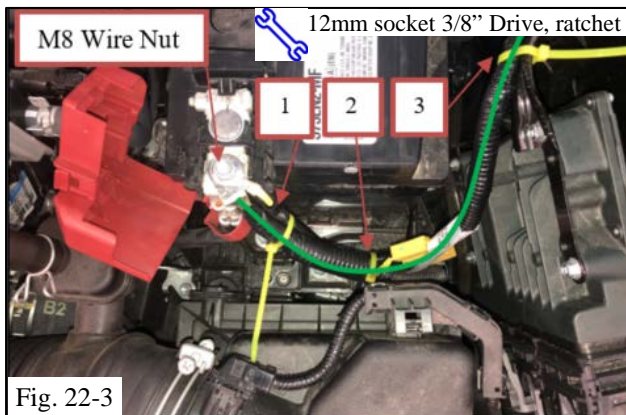
(5) Retain all removed fasteners.

(g) Locate the 4-Pin Inline Electrical Connector to the LH Combination Lamp (Fig. 21-10) (LH side).

(h) Disconnect the LH male 4-Pin inline electrical connector (Fig. 21-10) (LH side), disengaging the male connector from the female connector attached on the vehicle body.

(i) Repeat on the RH (Fig. 21-11) (RH side).

22. Install the Trailer Power Wire



(a) Locate on the trailer power wire harness (Item 3 in the Kit), the fuse housing (Fig. 22-1).

(b) Remove the 15Amp fuse before proceeding to the next step (Fig. 22-2).

(c) Retain the fuse. The fuse will be re-installed in a later step (Fig. 22-2).

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

(d) Remove the red B+ connector cover. Using 12 mm socket remove M8 wire nut from the main wire engine room bracket, disconnect main wire engine room from B(+) terminal battery cable (Fig. 22-3).


(e) Install the terminal from trailer power wire to the main wire engine room bracket as shown in (Fig. 22-3).

⚠ NOTE: Make sure to position the ring terminal at approximately 4 o'clock against the plastic housing so that the protective cover can be reattached over the battery post.

(f) Reattach the M8 nut, to the main wire engine room bracket (Fig. 22-3).

⚠ NOTE: Test fit the protective cover can be reattached over the battery post.

- (g) Torque the main wire engine room bracket nut.

 **Torque: 7.5 N·m (66.4 in·lbf)**

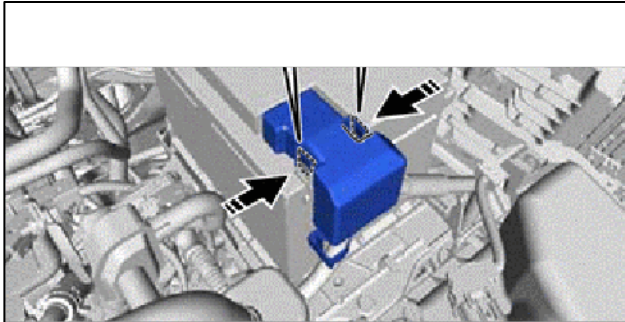


Fig. 22-4

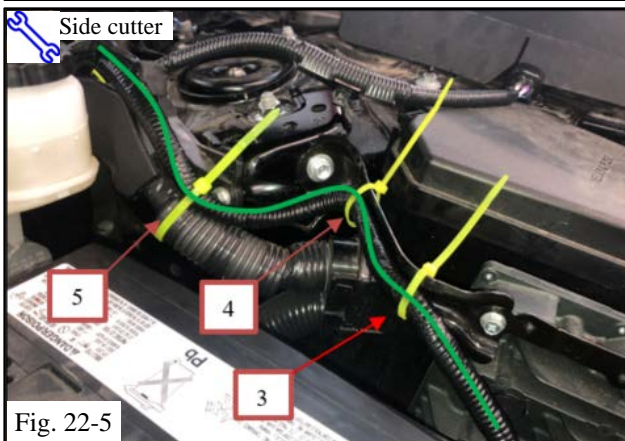


Fig. 22-5



Fig. 22-6

- (h) Reattach the 2 claws of the Connector Cover on the Positive (+) Battery Terminal (Fig. 22-4).

- (i) Route Trailer Power Wire on top of the vehicle wire harness (Fig. 22-3 & Fig. 22-5).
- (j) Secure the trailer Power Wire with Electrical Insulating Tape on top of the vehicle wire harness, secure it with Wire Ties (Item #4 Hardware Bag kit) to the vehicle wire harness as shown.
- (k) Clip the excess of the wire ties for all wire ties used.

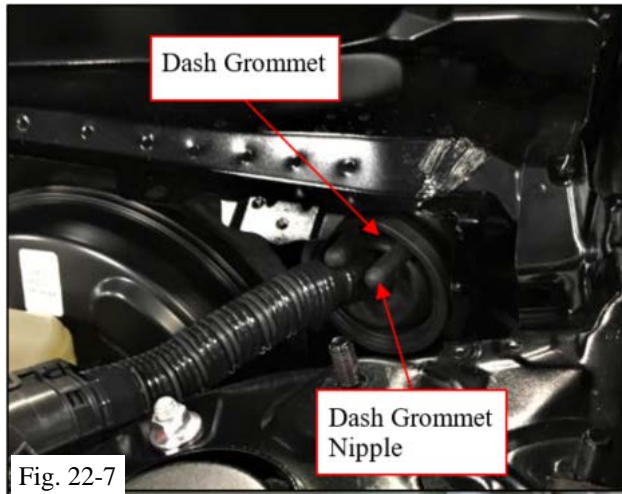
- (l) Route trailer power wire along vehicle wire harness in the under hood compartment (Fig. 22-6).

- (m) Follow vehicle wire harness towards and along the LH fender and every 150mm (6 inches) secure the Trailer Power Wire to the vehicle wire harness with Electric Insulating Tape and on top of it with Wire Ties as shown in Fig. 22-5 and Figure 22-6 to properly secure routing. Make sure the wire is not taut during routing.

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

⚠ NOTE: Do not secure trailer power wire to hood cable. Hood cable must be free for proper operation.

- (o) Locate the dash grommet and the dash grommet nipple (Fig. 22-7).



- (p) Using the side cutter, cut the end of the dash grommet nipple and route the power wire through it (Fig. 22-8).



- (q) Pull excess wire into the vehicle interior, until there is about 50 mm of trailer power wire left between its convoluted tube and the tip of the grommet nipple (Fig. 22-9).





- (r) Add Wurth Black Silicone Special 250 (or Euroseal Gel), Item #1 from Additional Items Required For Installation to the 50mm of exposed wire insulation (Fig. 22-10).
- (s) Pull excess of wire into vehicle interior until convoluted tube meets dash grommet nipple and secure trailer power wire with wire tie over nipple grommet. Refer to wire tie #10 in Fig. 22-10.



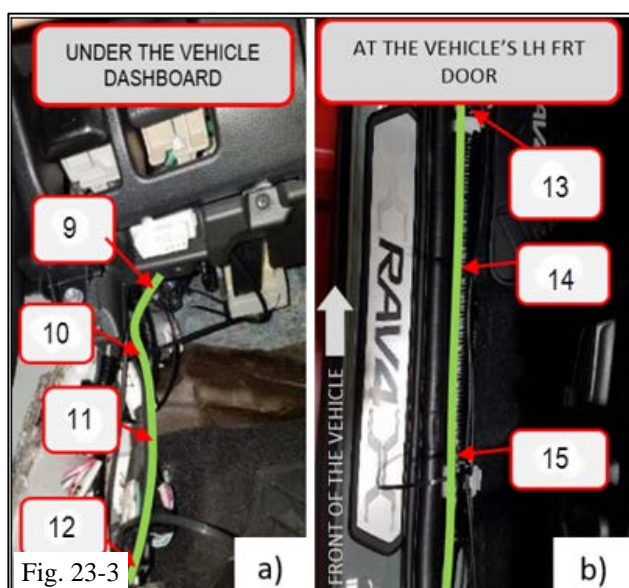
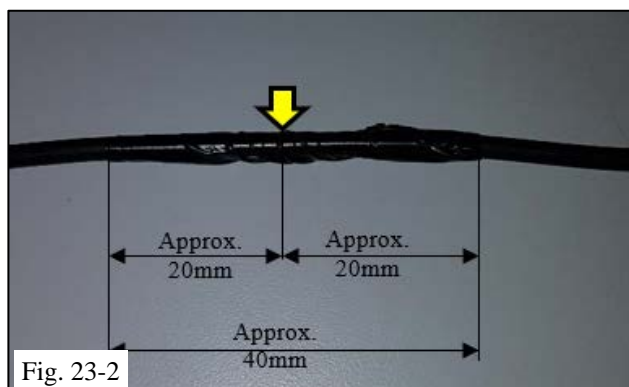
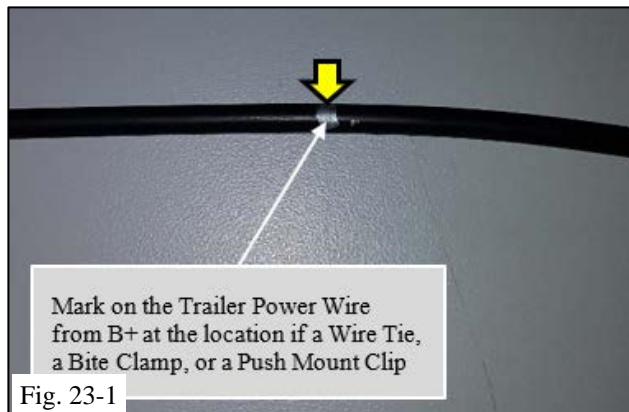
- (t) To prevent water intrusion to vehicle interior, route the trailer power wire so it creates a downward U-Shape loop (Fig. 22-10) right before the dash grommet nipple.
- (u) Secure the trailer power wire with electrical insulating tape to the vehicle wire harness and on top of the tape with wire ties to secure the U-shape loop (Fig. 22-10).
- (v) Clip the excess wire.

23. Route the Trailer Power Wire.

- (a) Route the trailer power wire along the vehicle wire harness in the vehicle interior toward the rear of the vehicle.



NOTE: Never apply a wire tie directly on the Trailer Power Wire from B+ insulation.



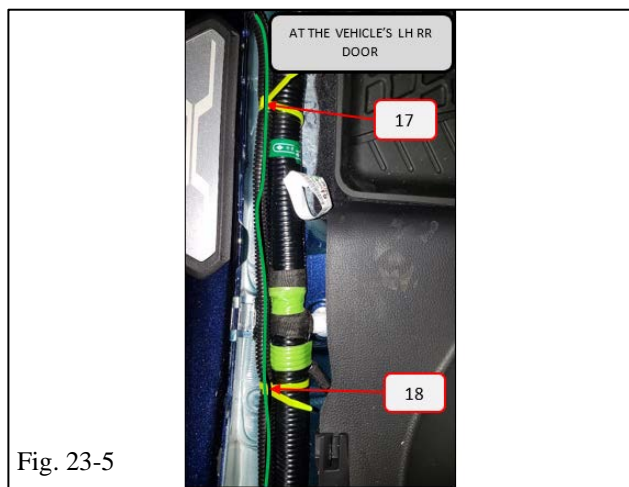
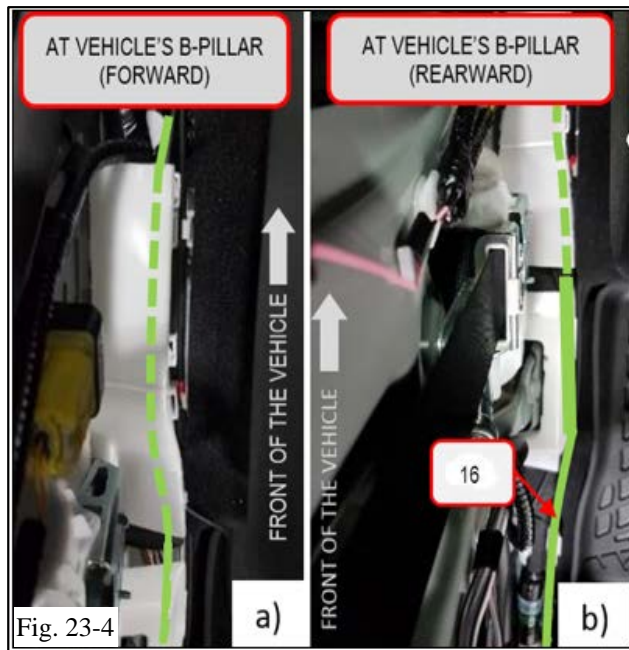
(b) Typical electric insulation tape application on the Trailer Power Wire from B+ :

(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. 23-1). 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. 23-2).

NOTE: This will apply in ALL location of attachment of the trailer power wire from B+ or trailer module harness ground wire to the vehicle wire harness with a wire tie.

(c) Follow vehicle wire harness and secure the trailer power wire every 150mm (6 inches) as shown (Fig. 23-3) using electric insulating tape and on top of the insulating tape, using wire ties.



(d) Continue routing trailer power wire along vehicle wire harness securing trailer power wire to the vehicle wire harness, first with electric insulating tape and then with wire ties at the vehicle's front LH door (Fig. 23-3) Side (B).

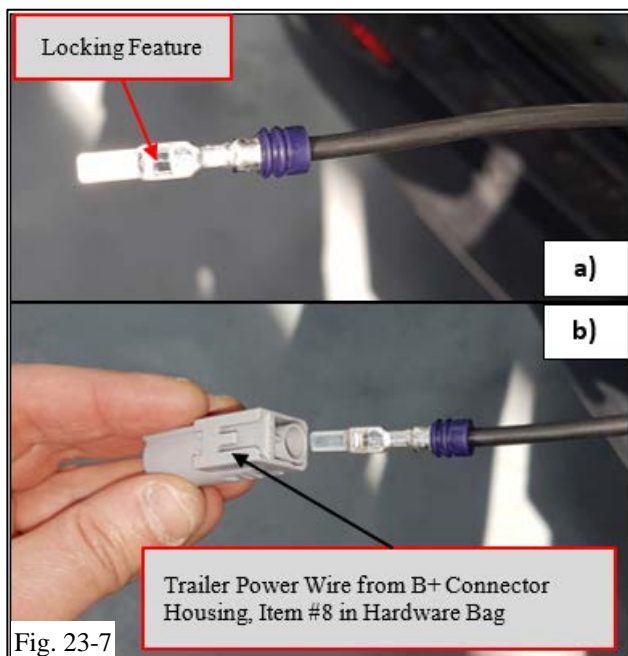
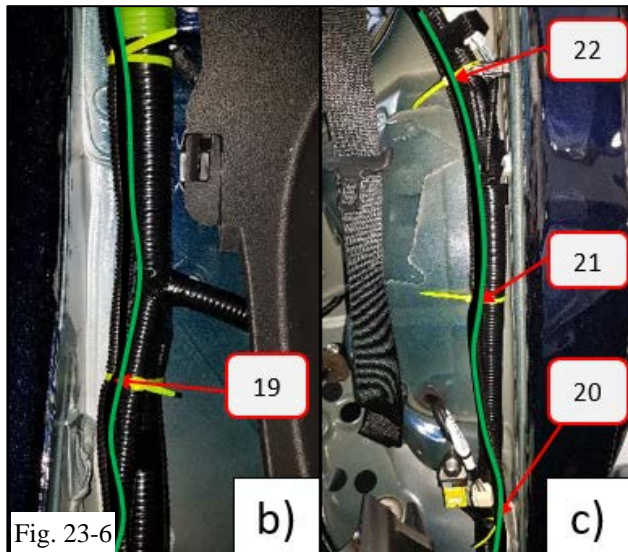
(e) Continue routing trailer power wire along vehicle wire harness in the vehicle LH B-pillar area. At the B-pillar junction box (Fig. 23-4 [Sides A&B]), un-snap and open the front box cover, and route the trailer power wire along the vehicle wire harness. Secure the trailer power wire with electric insulating tape and then with wire tie to the vehicle wire harness as shown.

NOTE: Route inside of the leading white junction box and outside of the trailing white junction box.

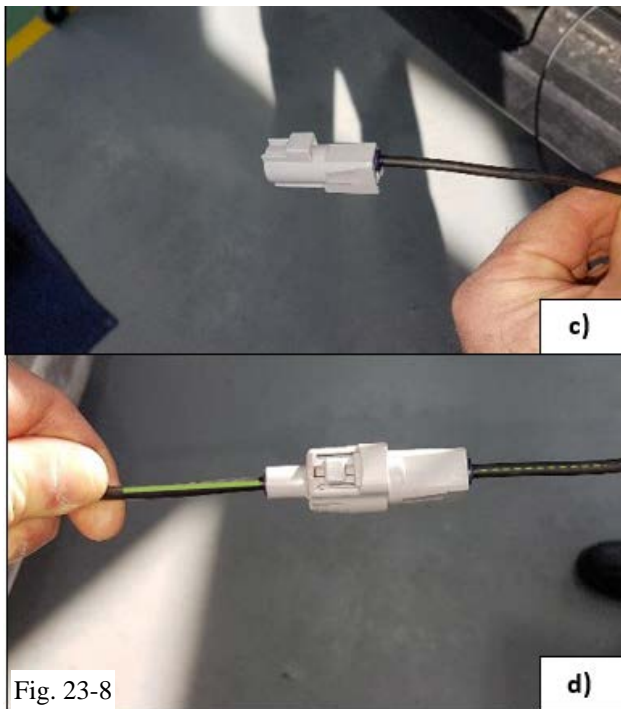
(f) Clip the excess of wire ties.

(g) At the RR LH door, route along the vehicle wire harness the Trailer Power Wire (Fig. 23-5). Secure the Trailer Power Wire first with electric insulating tape and then with wire ties to the vehicle wire harness as shown.

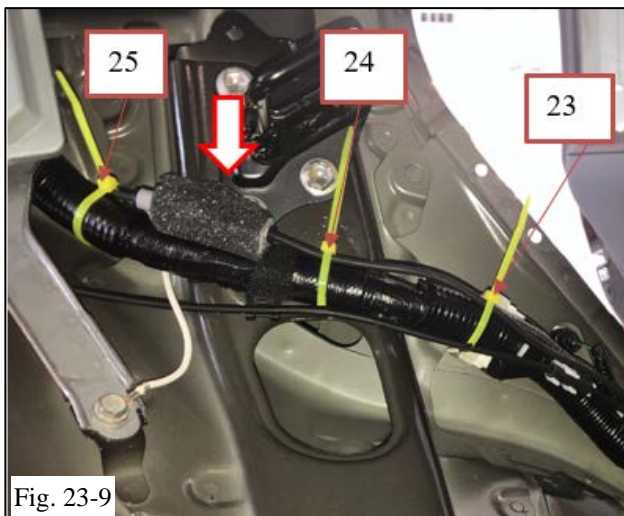
(h) Clip the excess of the wire ties.



- (i) Continue routing trailer power wire along vehicle wire harness in the LH vehicle C-pillar area and toward the LH RR wheel housing.
- (j) Secure the trailer power wire first with electric insulating tape and then with wire ties to the vehicle wire harness (Fig. 23-6) (Sides A&B).
- (k) Clip the excess of the wire ties for all wire ties used.
- (l) 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. 23-7) (Sides A&B).

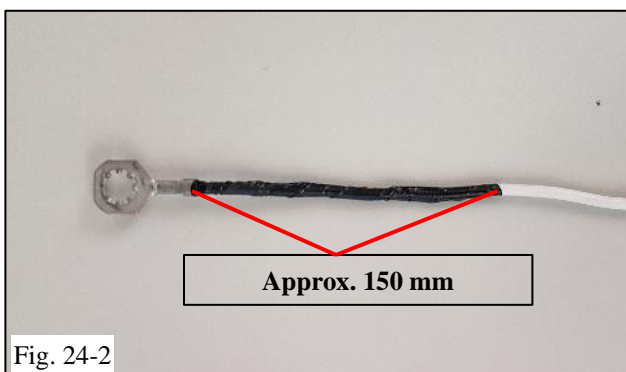
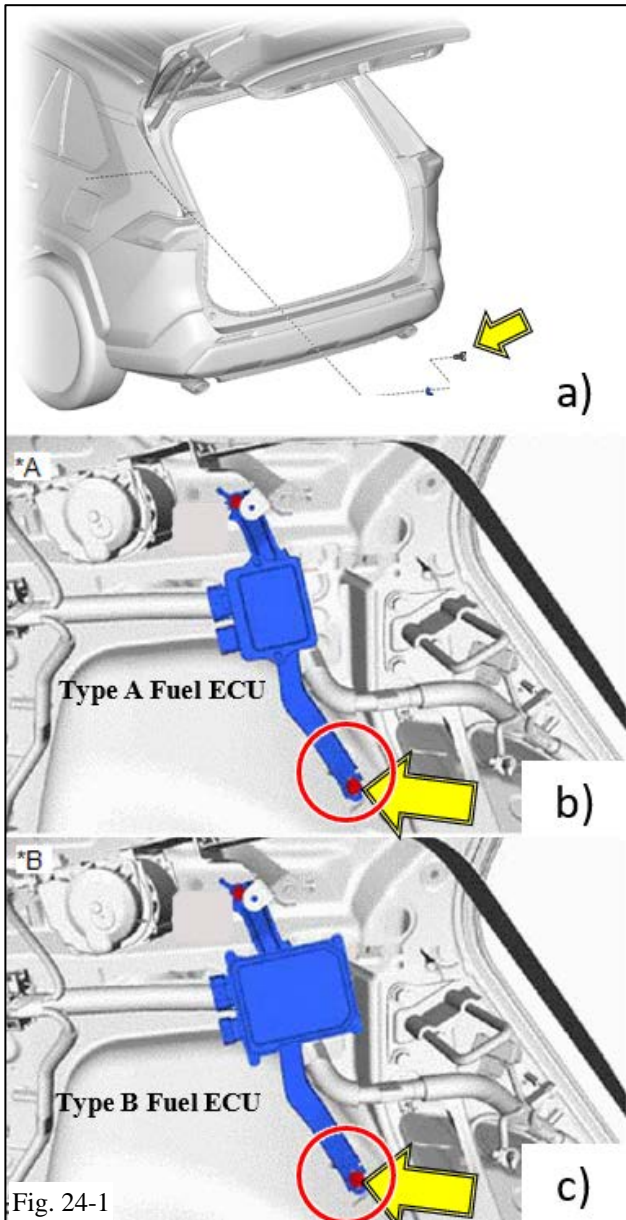


- (2) Push to lock the Trailer Power Wire terminal into position (Fig. 23-8). Make sure terminal is fully inserted. An audible click is to be registered (Fig. 23-8).
- (3) Pull gently the Trailer Power Wire, holding the Connector Housing, confirming Trailer Power Wire terminal is correct inserted in the Connector Housing. (Fig. 23-8).
- (4) Connect the Connector from Power Wire (Trailer Module Harness Side) and Trailer Power Wire from B+.



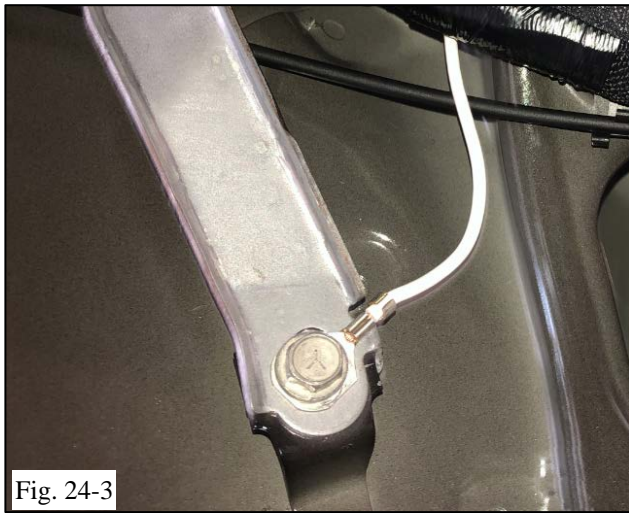
- (m) Wrap the Connector from Power Wire (Trailer Module Harness Side) and Trailer Power Wire from B+ in foam pad (item 9 in Hardware bag) secure between zip tie #24 and #25 (Fig. 23-9).

⚠ NOTE: Do not zip tie over the fuel filler cable.

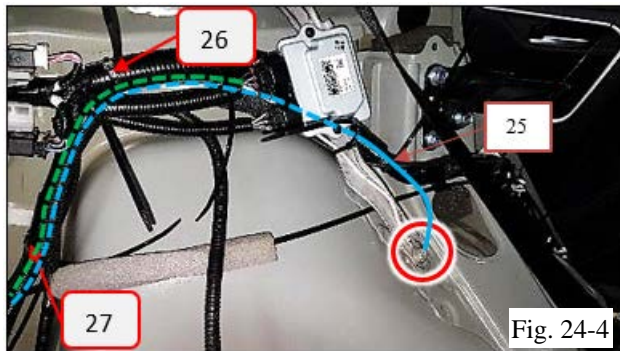


24. Attach the Trailer Wire Ground Terminal.

- (a) Attach Trailer Wire Ground terminal (white wire with ring terminal part of Trailer Module Harness, Item#1 in Kit Contents) to vehicle ground bolt:
 - (1) Locate the vehicle ground bolt (Fig. 24-1 [a]). The ground bolt is located in the vehicle RR LH quarter on the vehicle C-pillar.
 - (2) Its location is indicated by arrows in Fig. 24-1 [b] and Fig. 24-1 [c], depending of the vehicle fuel ECU type.
- (b) Remove the ground bolt, using 10mm socket.
- (c) On the Ground Wire measure, starting with the terminal, approx. 150mm (6 inches) and mark the length (Fig. 24-2).



- (d) 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. 24-3).



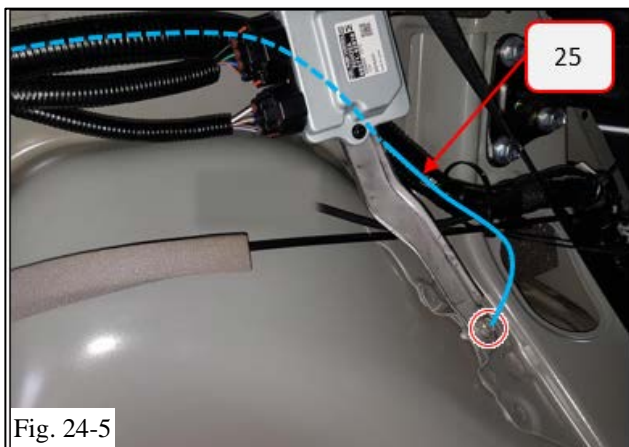
- (e) Attach Trailer Wire Ground (Fig. 24-4) to vehicle ground with the ground bolt.

- Ground wire
- - - Ground wire – non visible route
- - - Power wire (trailer module harness side)

- (f) Reinstall the ground bolt.

⚠ NOTE: Make sure to reinstall all existing ground wires/terminals at the location.

⚙ Torque bolt: Tighten the ground bolt to **10 N·m (7 ft·lbf)**.



- (g) Secure the Trailer Wire first with electric insulating tape and on top of it with wire ties to the vehicle wire harness as shown in Fig. 24-5.
- (h) Clip the excess of wire ties for all wire ties used.

25. Install the Trailer Electronic Module.

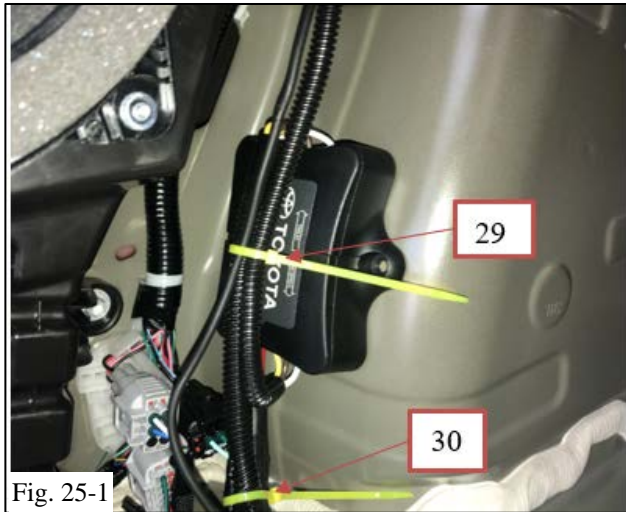


Fig. 25-1

- (a) Install the trailer electronic module in the trunk (Fig. 25-1).
- (b) Continue routing the tow hitch wire harness securing it to the vehicle wire harness with tie wraps every 150mm (6 inches), first with electric insulating tape and on top with wire ties.
- (c) Clip the excess of wire ties for all wire ties used.
- (d) Locate flat surface to install trailer module nearby on the LH wheel house area. Clean the area with VDC approved cleaner.
- (e) Position the module against the wheel well as shown in Fig. 25-1, according to the dimensions described in the notes below.

NOTE: Dimensions for reference while positioning the module (Fig. 25-2):

- (1) Approximately 15 mm (0.5 inches) between LH side body panel and convertor box.
- (2) Approximately 110 mm (4.3 inches) between the floor panel and convertor box.

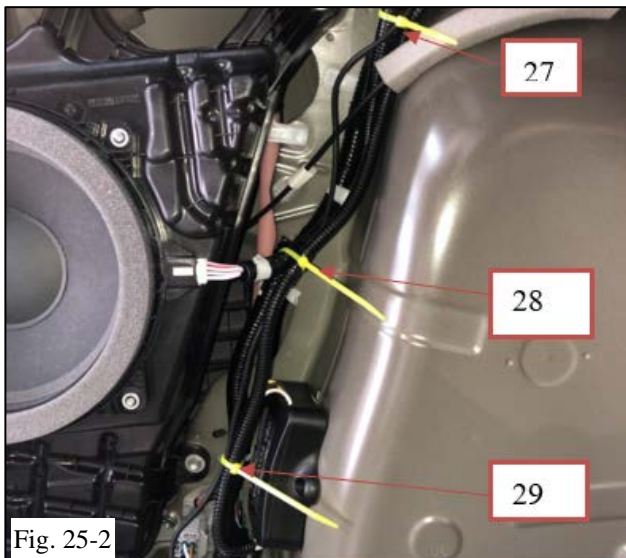


Fig. 25-2

- (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.



NOTE: Test the 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.

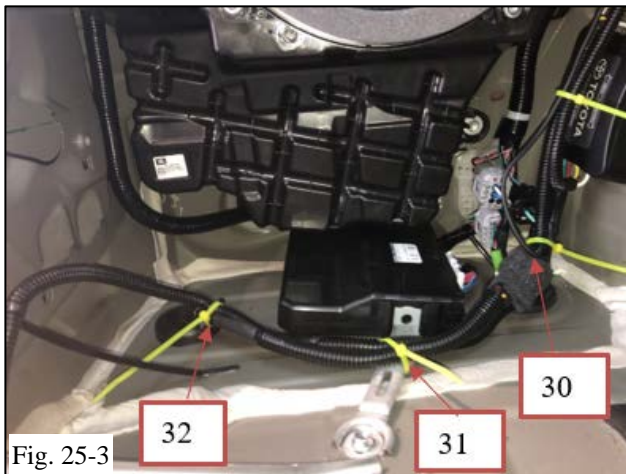


Fig. 25-3

- (g) Mark the temporary location, peel off completely double sided tape liner, place Trailer Electronic Module on the vehicle body and apply pressure, permanently affixing the Trailer Electronic Module on the vehicle body (Fig. 25-3).
- (h) Loosely install wire ties #30, #31 and #32 securing 4-Flat Connector Harness, Power Wire Trailer Module and RH RR Comb Lamp Assy to the existing vehicle wire harness and vehicle body (Fig. 3-3). Note Fig. 3-3 shows 4-Flat Harness and grommet installed from Section 4, Step 1.
- (i) Clip the excess of wire ties for the wire ties used.

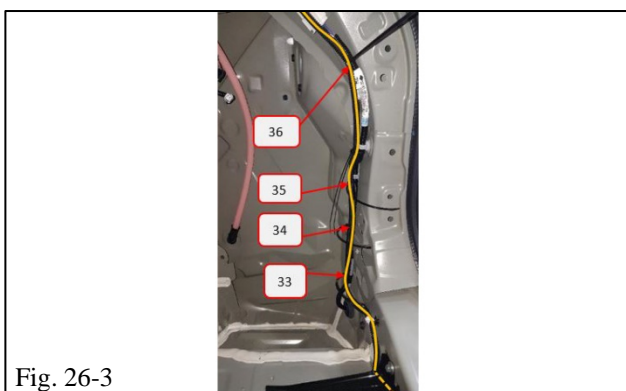
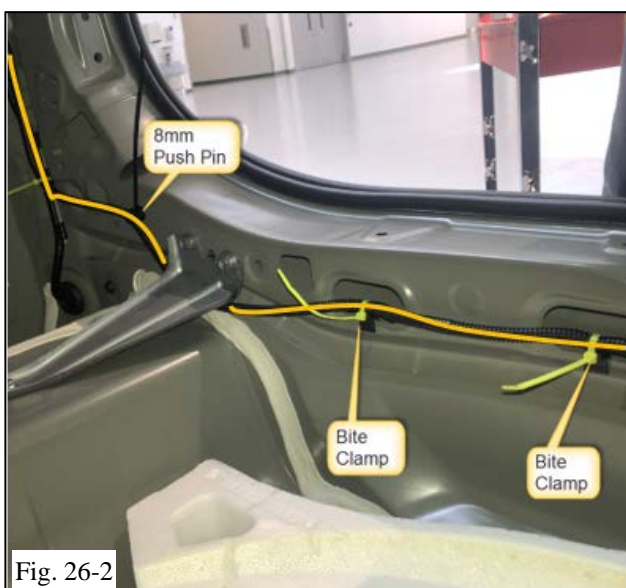
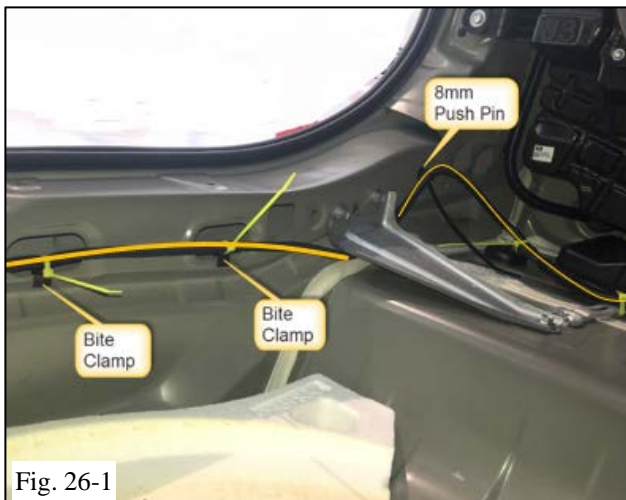
26. Route the Trailer Wire Harness to RH Rear Combination Lamp Assy.

- (a) Route Branch to RH RR Comb Lamp Assy wire along vehicle Body Lower Back, Panel Sub-assembly under the reinforcements, and secure it with Wire Ties, Bite Clamps, and Push Pin Clips from the hardware bag as shown (Fig. 26-1 and Fig. 26-2).

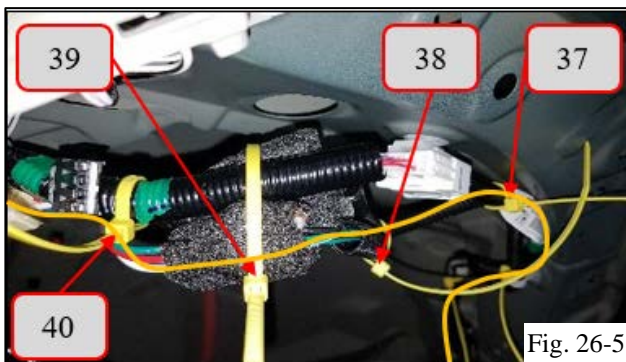
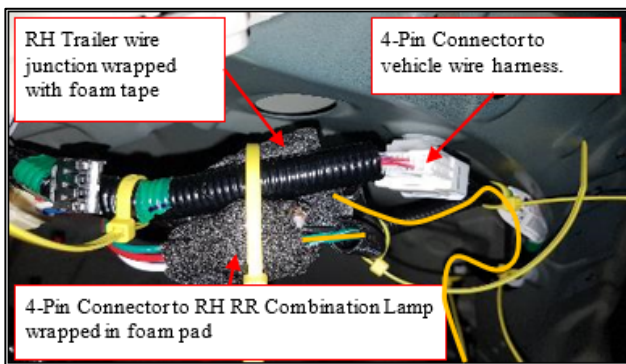
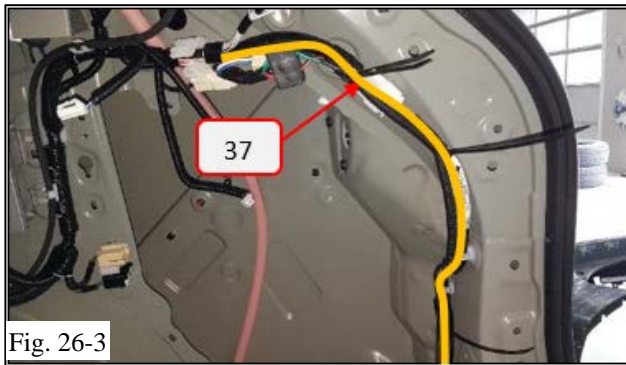
⚠ NOTE: While passing the wires under the Body Lower Back Panel Subassembly reinforcements, avoid sharp edges that may damage the wire or cause injury.

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

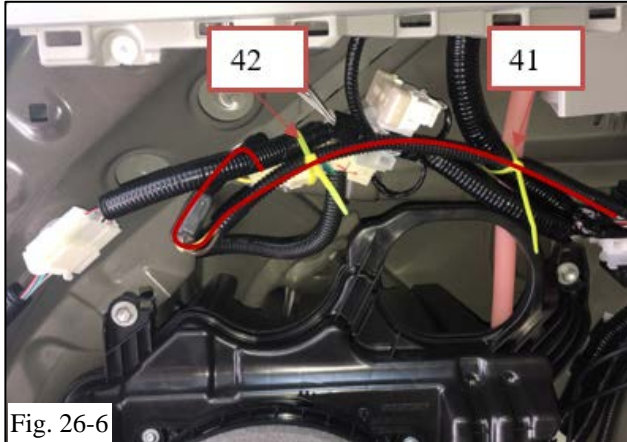
— Branch to RH RR Comb Lamp Assy



- (c) Continue routing trailer wire harness along vehicle wire harness as shown in Fig. 3-5 and Fig. 26-3, securing the routing to the vehicle wire harness using wire ties every 150 mm (6 inches).



- (d) Clip the excess of wire ties for all wire ties used.
- (e) Plug the trailer t-connection end with Green & Red wire into the 4-Pin Connector from RH RR Combination Lamp Assy (Fig. 26-4).
- (f) Plug the trailer t-connection into the 4-Pin Connector from vehicle wire harness (Fig. 26-4).
- (g) Wrap foam pads around the 4-Pin Connector and RH Trailer Wire Junction of the trailer wire harness (Fig. 26-4).
- (h) Bundle the 4-Pin Connector and plastic junction block of the trailer wire harness to the vehicle wire harness and secure with wire ties (Fig. 26-5). Then, secure trailer wire to vehicle wire harness with another wire tie.
- (i) Clip the excess of wire ties for all wire ties used.
- (j) Route the trailer wire branch to LH RR Combination Lamp Assy. Secure the trailer wire with wire ties to the vehicle wire harness as shown. Loop and secure any excess of trailer wire (Fig. 26-5).



(k) Route the trailer wire harness along vehicle wire harness and secure it with a wire tie every 150 mm (6 inches).

(l) Secure the LH trailer wire harness branch with wire ties to the vehicle wire harness as shown (Fig. 26-6).

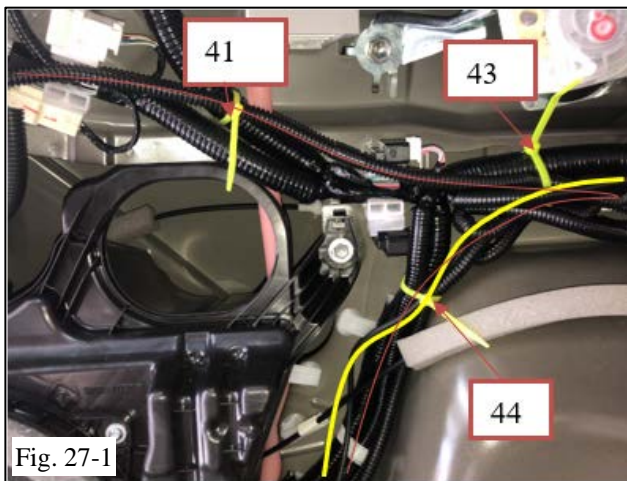
(m) Loop and secure any excess of wire (Fig. 26-6).

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

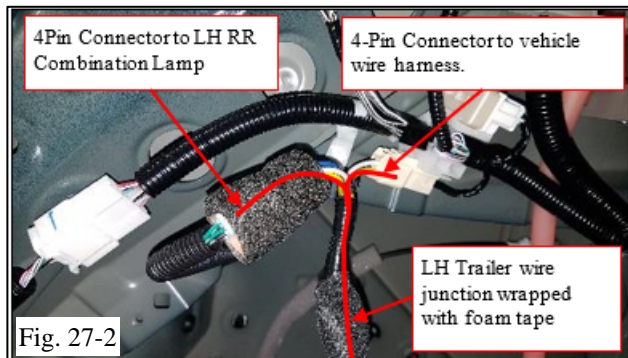
- Branch to LH RR Comb Lamp Assy
- Branch to RH RR Comb Lamp Assy

27. Route the Connections.

(a) Route the RH T-Connection End, 4-Flat Connector Harness, Power Wire Trailer Module, side along vehicle wire harness as shown in Fig. 27-1. Bundle excess wire under zip tie #43.



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

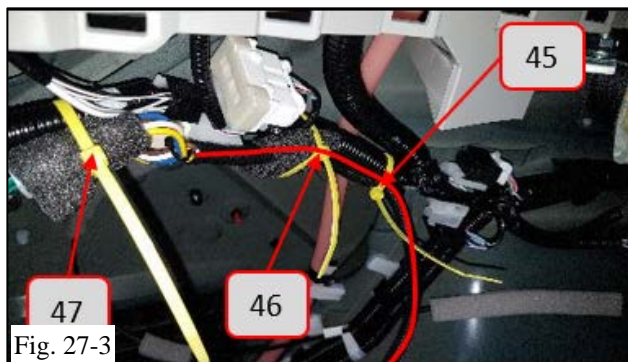


- (b) Plug the trailer t-connection end with Yellow & Brown wires into the 4-Pin Connector from LH RR Combination Lamp Assy (Fig. 27-2).
- (c) Plug the trailer t-connection into the 4-Pin Connector from vehicle wire harness (Fig. 27-2).



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

- (d) Wrap foam pads around the loose 4-Pin connection and plastic junction block of the trailer wire harness (Fig. 27-2).
- (e) Secure the trailer wire with wire ties to the vehicle wire harness as shown (Fig. 27-2).
- (f) 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. 27-3).
- (g) Secure the trailer wire with wire ties to the vehicle wire harness as shown (Fig. 27-3).



28. 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. 28-1).
- (b) Remove the hole dummy cover and discard it.



29. Route the 4-Flat Connector Harness.

- (a) Route the 4-Flat connector harness through the hole (Fig. 29-1 and Fig. 29-2) from the interior of the vehicle toward the exterior of the vehicle .

⚠ NOTE: Pull the 4-Flat Connector Harness Grommet past the hole then back until Grommet is locked in the hole. (Fig. 29-1).

- (b) Connect the 4-Flat Harness to the Trailer Module Harness (Fig. 29-1).

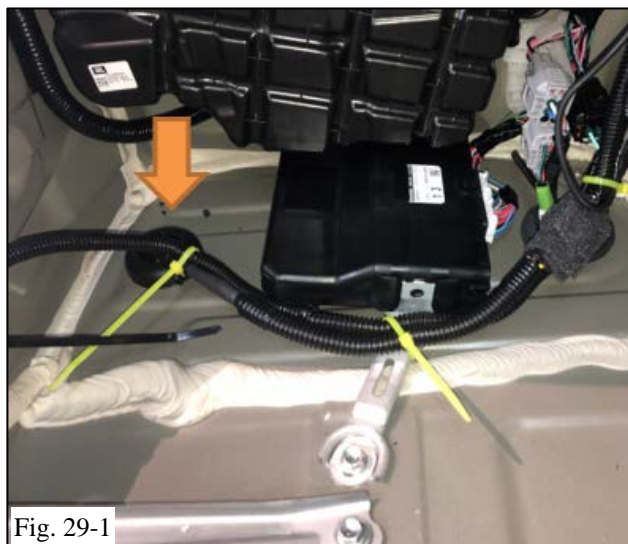




Fig. 29-2

- (1) Wrap the connector between with foam pad (Fig. 29-2).
- (2) Secure the 4-Flat Harness connection to Trailer Module Harness wrapped with foam tape to vehicle or existing trailer wire harness with wire tie (Fig. 29-2).
- (3) Tighten the tie wraps. #30, #31 and #32 (shown in Fig. 25-3)
- (4) Clip the excess of wire ties for all wire ties used.

30. Route 4-Flat Wire Harness in the Exterior of the Vehicle.

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

Colour Legend:

- Trailer 4- Flat Wire Harness
- - - Trailer 4- Flat Wire Harness – not visible route

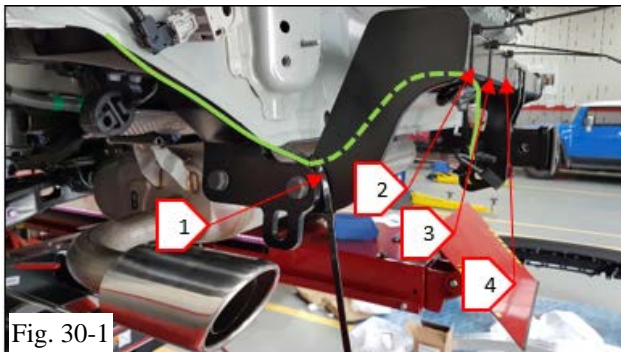


Fig. 30-1

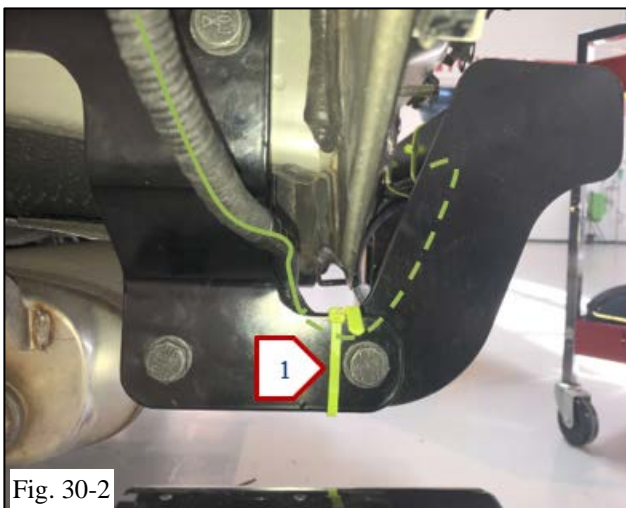


Fig. 30-2

- (a) Follow tow hitch bracket and secure with Wire Tie 14" (Item #5 in the Hardware Bag) as shown (Fig. 30-1 and Fig. 30-2).
- (b) 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.

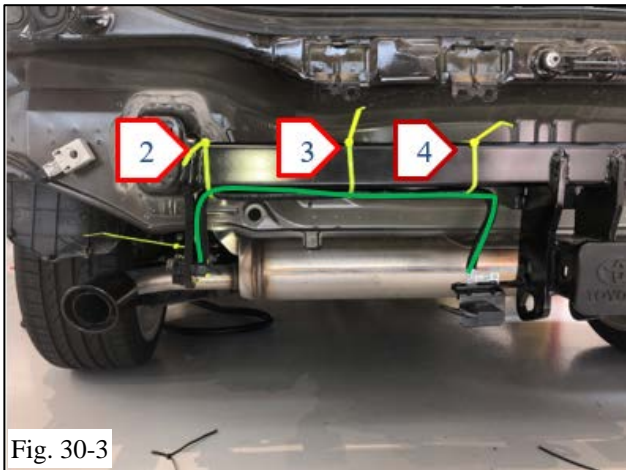


Fig. 30-3

(c) 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.

Colour Legend:

- Trailer 4-Flat Harness - visible route
- - - Trailer 4-Flat Harness – not visible route

31. Refer to Towing Hitch Installation

Instructions for Reinstallation of the Rear Bumper Assembly.

- (a) Attach 4-Flat Connector with Mounting Bracket 4-Flat (Item #2 from Kit Contents) into hitch bracket, using 2 sets of provided Screws #10-24 and Nut/Washer#10-24 (Items #2 and #3 from Hardware Bag). (Fig. 31-1).

Torque: 3.9 N·m (35 lbf·in)

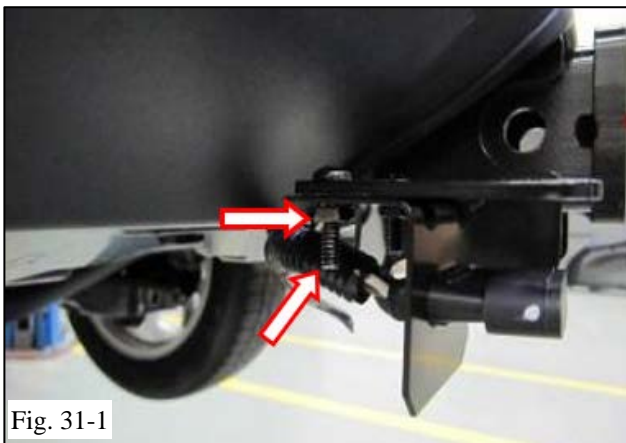


Fig. 31-1

32. 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.

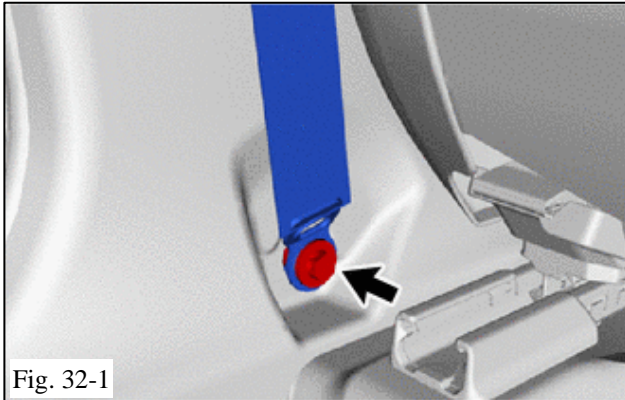


Fig. 32-1


S Torque Lower B-Pillar LH Seat Bolt: 42 N•m (31 lb•ft) (Fig. 32-1).


S Verify the B-pillar LH Seat Belt is not twisted and works properly after the bolt is reassembled.

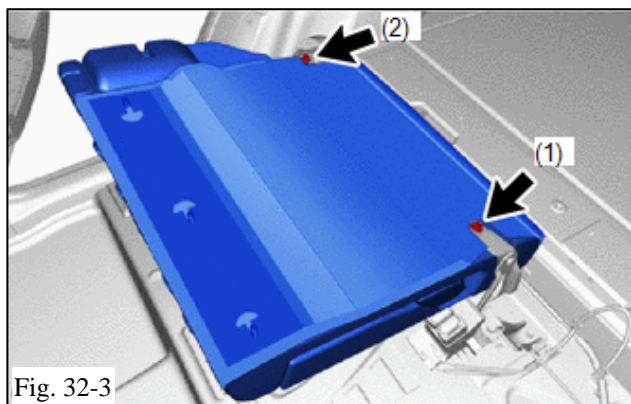
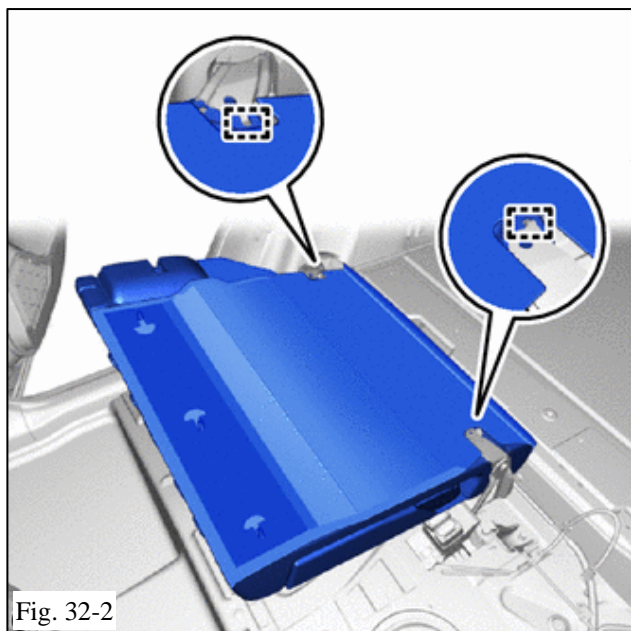
⚠ NOTE: Be careful not to damage the rear seatback assembly LH, body exterior or interior parts.

⚠ 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, Step 17.

 **Torque RH Bolts (1) and (2): 36.8 N•m (27 lb•ft) (Fig. 32-2 and Fig. 32-3).**



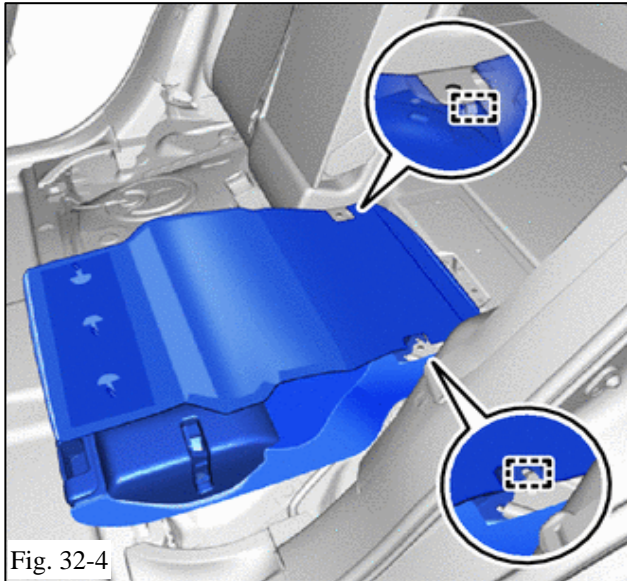


Fig. 32-4

S Torque LH Bolts (1) and (2): 36.8 N•m (27 lb•ft) (Fig. 32-4 and Fig. 32-5).

- (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.

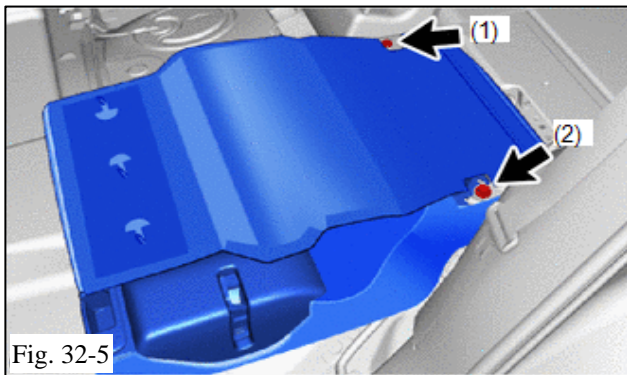
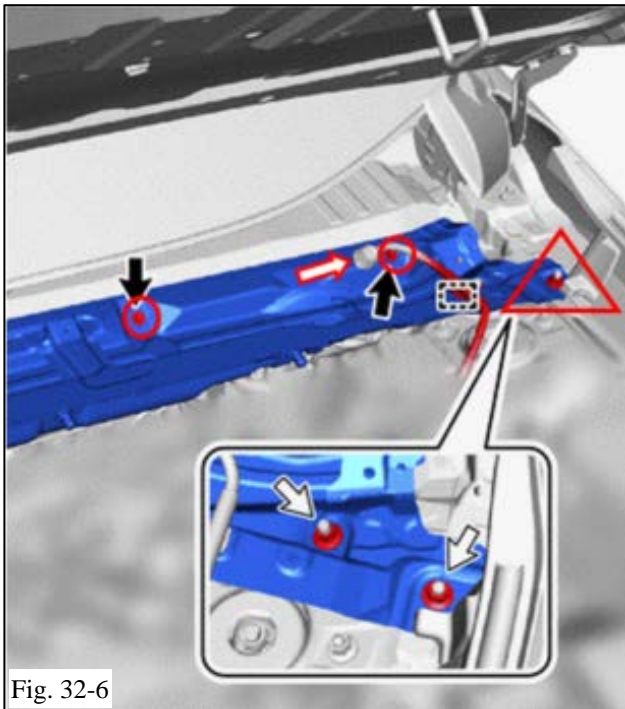


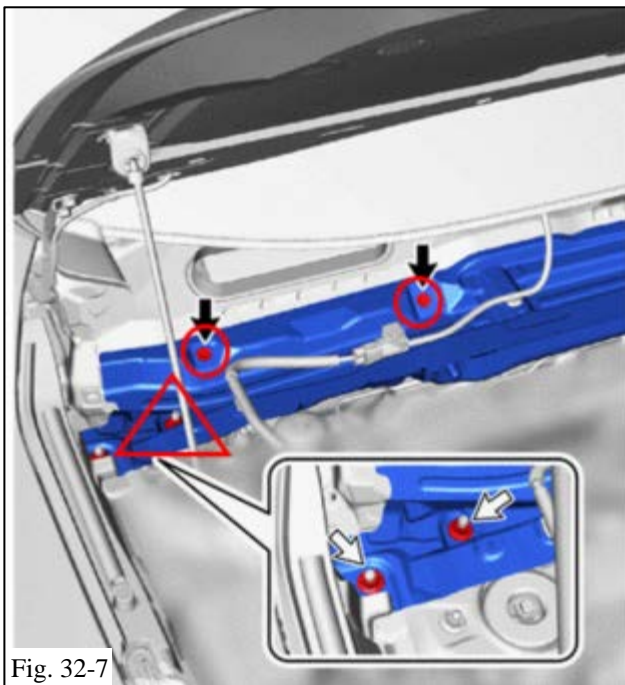
Fig. 32-5

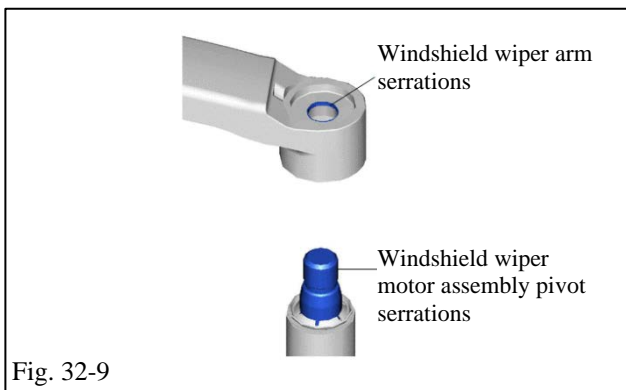
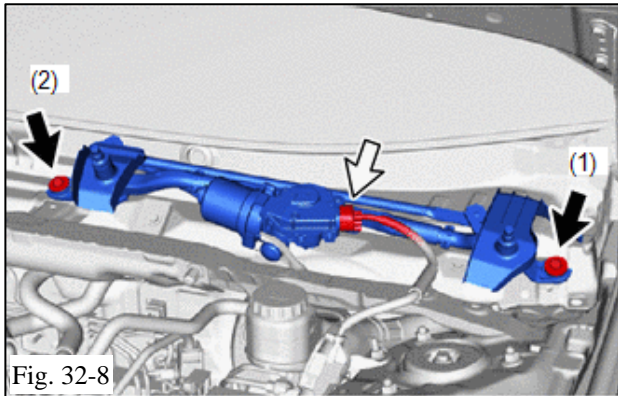


(b) Reinstall the cowl ventilator panel sub-assembly (Fig. 32-6 and Fig. 32-7).

⚠ Torque the nuts: 29 N•m (21 lb•ft) shown with white arrows.

⚠ Torque the bolts: 5.5 N•m (21 in•ft) shown with black arrows.





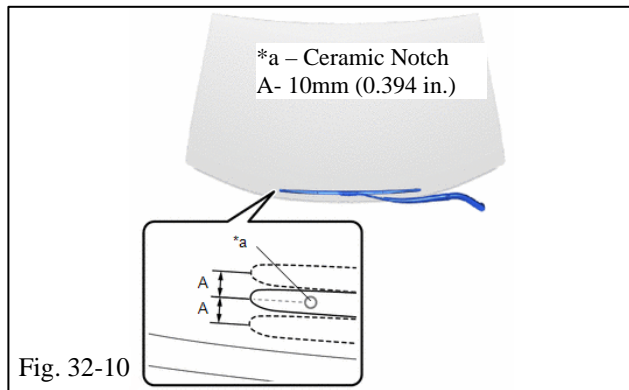
- (c) Reinstall windshield wiper motor and link assembly.
- (d) Torque the two bolts removed in Section 1, Step #7 (Fig. 1-10) of the windshield wiper motor and link assembly to 5.5 N·m (4.1 lb·ft) (Fig. 5-4), on 2 locations indicated by the black arrows).
- (e) Reconnect the connector (Fig. 5-4, the white arrow).
- (f) While installing the windshield wiper arm and blade assembly LH.
- (g) Clean the windshield wiper arm serrations (Fig. 32-9).

NOTE: Do not grind the windshield wiper arm serrations.

- (h) Using a wire brush or clean shop towel, clean the windshield wiper motor assembly pivot serrations (Fig. 32-9).

NOTE: Do not grind the windshield wiper arm serrations.

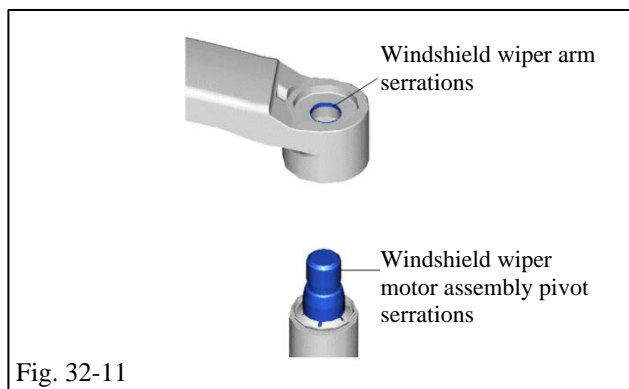
NOTE: Use a clean shop towel.



- (i) Align the ceramic notch of the windshield glass sub-assembly with the edge of the windshield wiper arm and blade assembly LH to install the windshield wiper arm and blade assembly LH with the nut (Fig. 32-10).
- (j) Raise the windshield wiper arm 2 times and check that the tip of the windshield wiper blade is within the range shown in the illustration.

S Torque the wiper arm nut: 26 N•m (19 ft•lbf).

NOTE: Hold the wiper arm by hand while tightening the nut.



- (k) While installing the windshield wiper arm and blade assembly RH clean the windshield wiper arm serrations (Fig. 32-11).

NOTE: Do not grind the windshield wiper arm serrations.

- (l) Using a wire brush or clean shop towel, clean the windshield wiper motor assembly pivot serrations (Fig. 32-11).

NOTE: Do not grind the windshield wiper motor assembly pivot serrations.

NOTE: Use a clean shop towel.

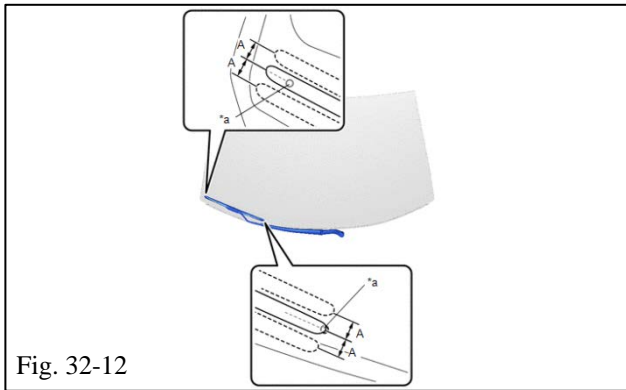


Fig. 32-12

(m) Align the ceramic notch of the windshield glass sub-assembly with the edge of the windshield wiper arm and blade assembly RH to install the windshield wiper arm and blade assembly RH with the nut (Fig. 32-12).

(n) Raise the windshield wiper arm 2 times and check that the tip of the windshield wiper blade is within the range shown in the illustration (Fig. 32-12).

S Torque the wiper arm nut: 26 N•m (19 ft•lbf).

! **NOTE:** Hold the wiper arm by hand while tightening the nut.

33. Verify the Trim Panels Fit Together Properly with no Uneven Gaps Between them.

34. Install the 15Amp Fuse.



Fig. 34-1

(a) Install the 15Amp fuse into Trailer Power Wire Harness Fuse Housing. Insure housing sits rearward of vehicle B+ harness. Close the fuse cover (refer to battery and fuse section).

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



Torque the battery terminal nut:



w/o Stop and Start System 5.0 N•m (44 in•lbf).

w/ Stop and Start System 5.4 N•m (48 in•lbf).



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

36. Store the Installation Instructions.

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

37. 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.

38. Perform a Parts Check.

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



NOTE: 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**

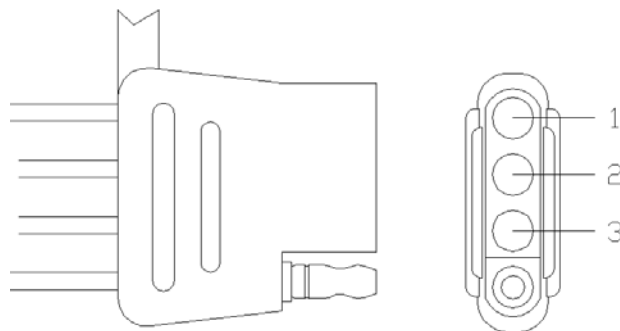
Read vehicle's owner's manual & instruction sheet for additional information.

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.



TRAILER WIRE HARNESS

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

Look For:

- Lift each front wiper blade twice after the front wipers stop and check set position.

☐ Corrosion on 4-Flat plug.

TOYOTA RAV4 2019 - TRAILER WIRE HARNESS

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

Check:

Look For:

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 TMNA Accessory Quality Shipping Standard.)