

Part Number: PK960-42K10**Kit Contents**

Item #	Quantity Req'd.	Description
1	1	Tow Hitch Welded Assembly
2	1	Ball Mount
3	2	Shim
4	1	Bolt on Side Arm LHS
5	1	Bolt on Side Arm RHS
6	1	Flat Side Arm LHS
7	1	Flat Side Arm RHS
8	1	Pin & Clip
9	1	Hardware Bag
10	1	Hitch Plug
11	1	Bumper Cover Trim
12	1	Capacity Label
13	1	8" Wire Tie

Hardware Bag Contents

Item #	Quantity Req'd.	Description
1	4	Nut Hex M12 x 1.25
2	16	Washer Flat M12
3	4	Bolt Hex M12 x 50 x 1.25
4	8	Bolt Hex M12 x 30 x 1.25

Additional Items Required For Installation

Item #	Quantity Req'd.	Description
1		
2		

Conflicts

Vehicles with Hands-free lift gate option

General Applicability

MY19 and newer RAV4, RAV4 HV models

Recommended Sequence of Application

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

*Mandatory

Vehicle Service Parts (may be required for reassembly)

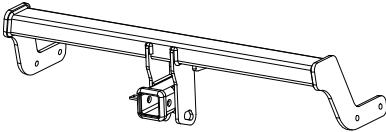
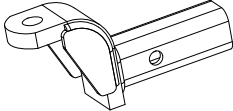
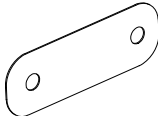
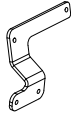
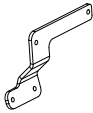
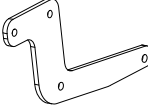
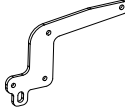
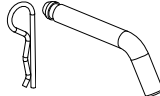
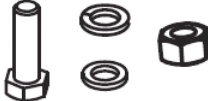

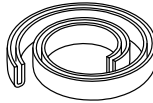
Item #	Quantity Req'd.	Description
1		
2		

Recommended Tools

Personal & Vehicle Protection	Notes
Vehicle Protection	Blankets
Vehicle Protection	Tape
Special Tools	Notes
Installation Tools	Notes
Clip Removal Tool	
Screw Driver	Phillips #2, Small Flat
Ratchet	3/8" Drive, 1/2" Drive
Socket	3/8" Drive – 12mm, 13mm, 14mm, 18mm
Socket	1/2" Drive – 17mm, 18mm
Medium Extension	3/8" Drive, 1/2" Drive
Wrench	18mm
Torque Wrench	3/8" Drive, 1/2" Drive
Exhaust Hanger Removal Tool	
Torque Wrench	Minimum 90 Nm (66 ft·lbf)
Open End Torque Head	19mm (maximum thickness 12.7mm)
Scraper	
Scissors	
Tin Snips	
Special Chemicals	Notes
VDC Approved Cleaner	

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

Parts List Overview:

Kit Content Item#	Item Description:	Visual Description:
1	Tow Hitch Welded Assembly (Kit Contents Item #1)	
2	Ball Mount (Kit Contents Item #2)	
3	Shim Kit (Kit Contents Item #3)	
4	Bolt-On Side Arm LHS (Kit Contents Item #4)	
5	Bolt-On Side Arm RHS (Kit Contents Item #5)	
6	Flat Side Arm LHS (Kit Contents Item #6)	
7	Flat Side Arm RHS (Kit Contents Item #7)	
8	Pin & Clip (Kit Contents Item #8)	
1-4	Fasteners (Hardware Bag Content #1 to #4)	
10	Hitch Plug (Kit Contents Item #10)	
11	Bumper Cover Trim (Kit Contents Item #11)	
12	Capacity Label (Kit Contents Item #12)	
13	8" Wire Tie (Kit Contents Item #13)	

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.).

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

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.



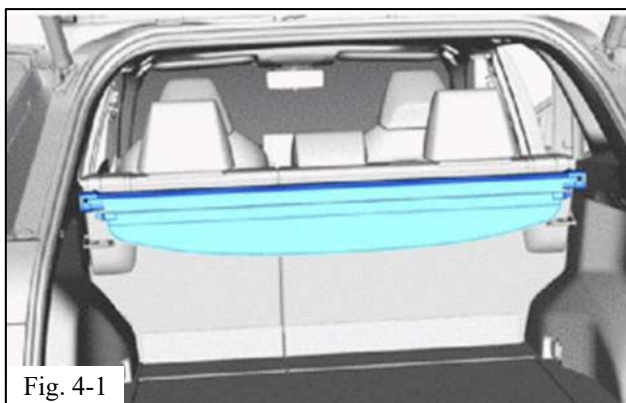
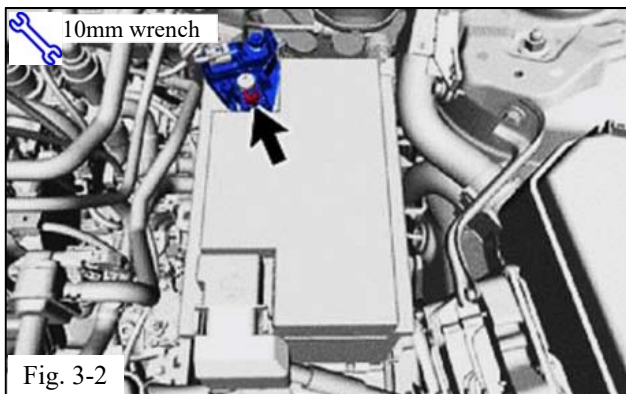
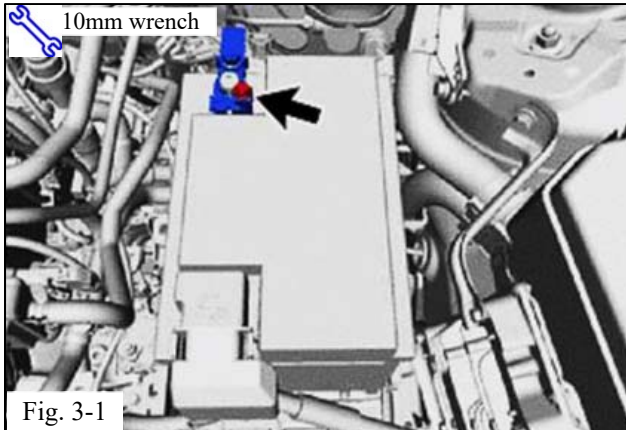
CAUTION: The muffler may be hot and/or sharp.



CAUTION: Wear safety glasses.

**3. Disconnect the Battery (Gas Vehicles).**

- (a) Open the hood.
- (b) Locate the battery on the front left-hand side of the vehicle.



(c) Identify whether the vehicle is equipped with Stop-Start System.

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

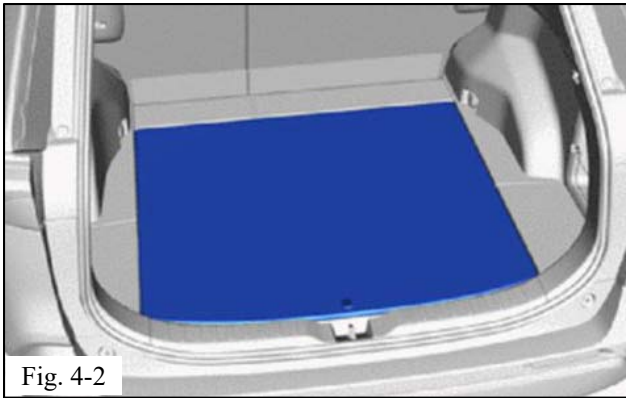
(e) If the vehicle **IS** equipped with Stop-Start System, reference Fig. 3-2 for negative (-) battery terminal location.

(f) Disconnect the negative (-) battery terminal from the battery using a 10mm wrench and isolate the negative battery terminal.

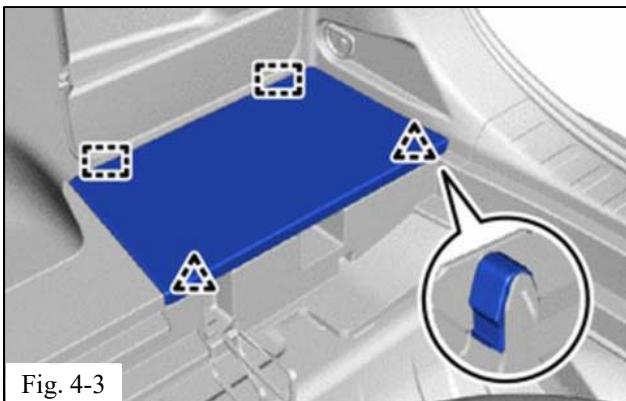
4. Disconnect the Battery (HV Vehicles).

(a) Locate the HV auxiliary battery located in the rear luggage compartment on the right-hand side.

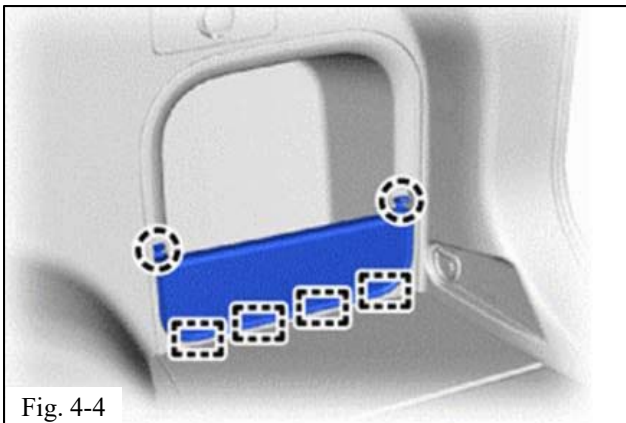
(b) Remove the tonneau cover assembly (if equipped) (Fig. 4-1).



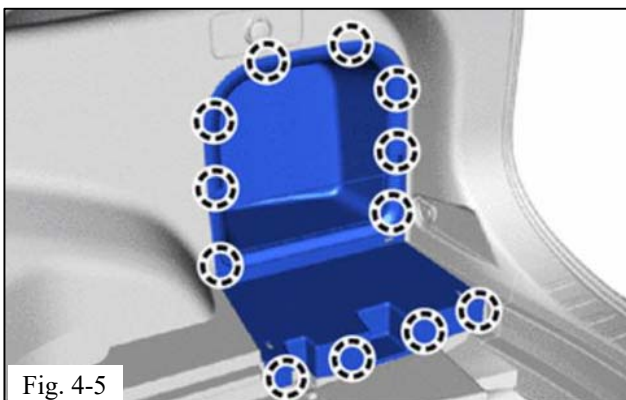
(c) Remove the deck board assembly (Fig. 4-2).



(d) Detach the (2) clips and (2) guides to remove the rear No. 2 floor board (Fig. 4-3).

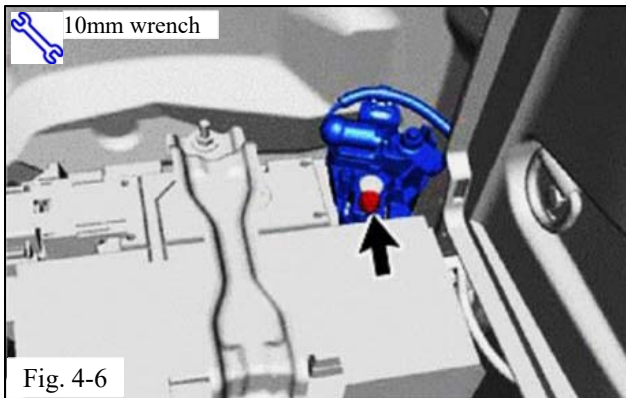


(e) Detach the (2) claws and (4) guides to remove the deck trim pocket cover plate (Fig. 4-4).



(f) Detach the (12) claws to remove the battery hole cover (for HV model) (Fig. 4-5).

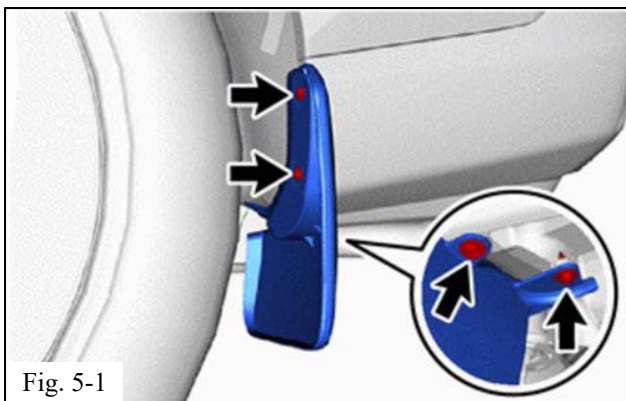
⚠ NOTE: Retain the removed parts.

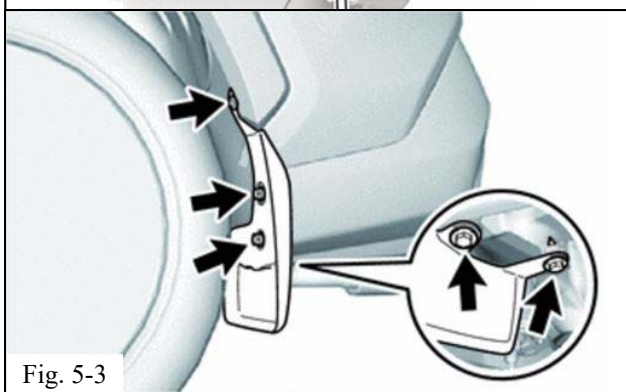
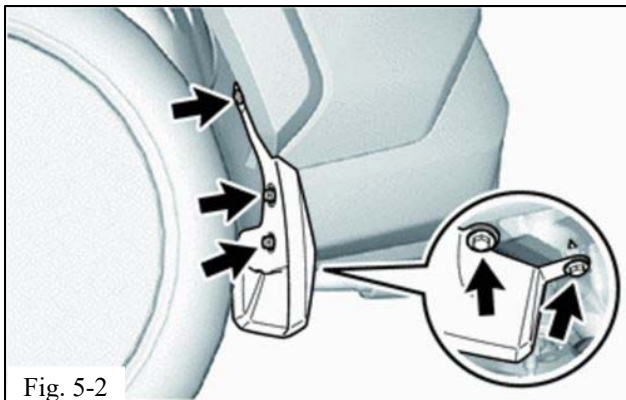


- (g) Disconnect the battery cable nut clamping the battery terminal (Fig. 4-6).
- (h) Disconnect the negative (-) battery terminal from the battery using a 10mm wrench and isolate the negative battery terminal.

5. Remove the Rear Quarter Panel Mudguards.

- (a) Remove the (4) screws to remove the Rear Quarter Panel Mudguard LH (for **short** type) (Fig. 5-1).



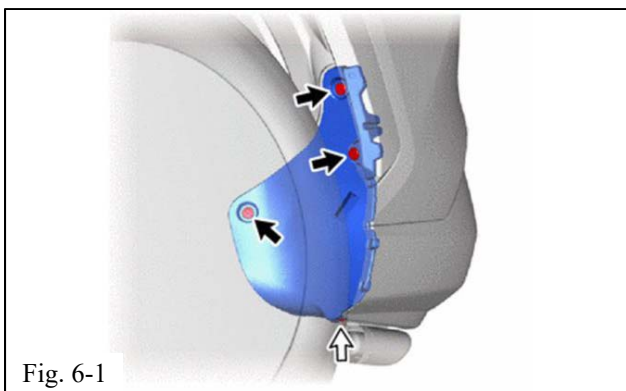


- (b) Remove the (5) screws to remove the rear quarter panel mudguard LH (for **long** type) (Adventure Grade Fig. 5-2 & all except Adventure Grade Fig. 5-3).

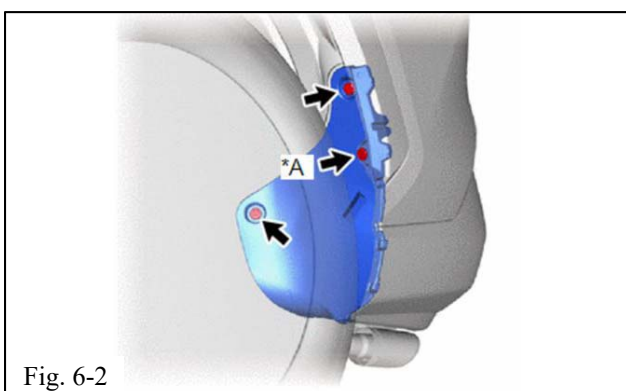
NOTE: Retain the removed parts. Repeat on the right-hand side.

- (c) Repeat Step 6 on the Right Side.

6. Remove the Rear Bumper Side Seal.



- (a) Remove the (3) clips to remove the rear bumper side seal **LH without mudguard** (Fig. 6-1).



- (b) Remove the (3) clips and (1) screw to remove the rear bumper side seal **LH with mudguard for short type** (Fig. 6-2).

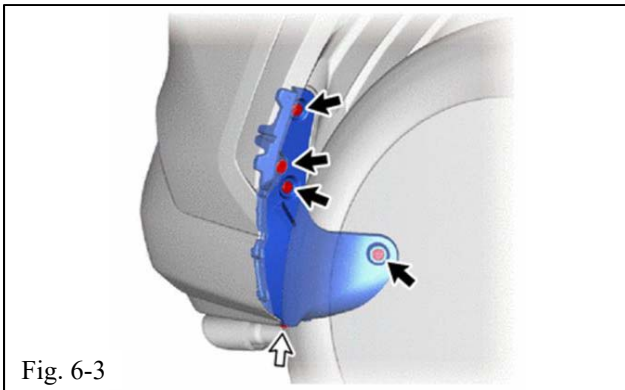
NOTE: The (*A) clip is **ONLY** for the short type of mudguard.

- (c) Remove the (2) clips to remove the rear bumper side seal **LH with mudguard for long type** (Fig. 6-2).

- (d) Remove the screw and rear bumper side seal LH.

⚠ NOTE: Retain the fasteners for reuse.

- (e) Remove the (4) clips and (1) screw to remove the rear bumper side seal **RH without Mudguard** (Fig. 6-3).

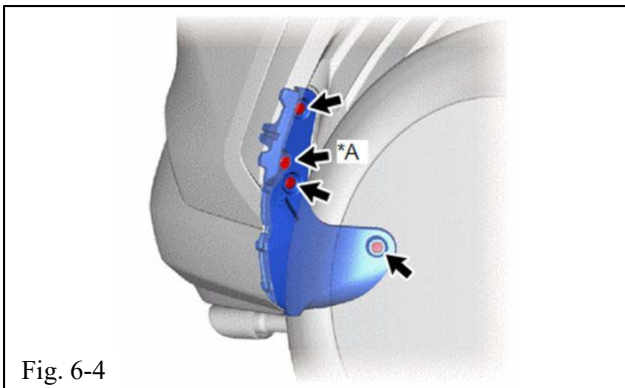


- (f) Remove the (4) clips to remove the rear bumper side seal **RH with mudguard for short type** (Fig. 6-4).

⚠ NOTE: The (*A) clip is ONLY for short type of mudguard.

- (g) Remove the (3) clips to remove the rear bumper side seal **RH with mudguard for long type** (See Fig. 6-2).

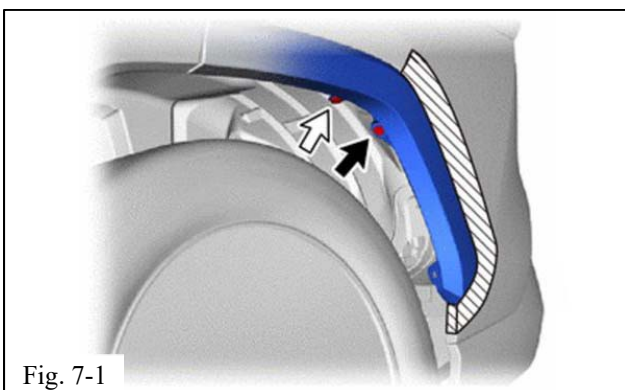
⚠ NOTE: Retain the fasteners for reuse.



7. Remove the Quarter Outside Molding Subassembly.

⚠ (a) For all models EXCEPT Adventure Grade proceed, otherwise skip to Step 7(b).

- (1) Apply protective tape around the quarter outside molding (Fig. 7-1).
- (2) Remove the screw (white arrow, Fig. 7-1).
- (3) Remove the clip (black arrow, Fig. 7-1).



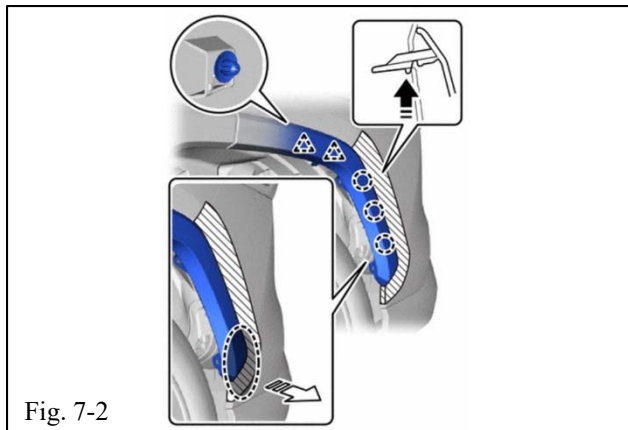


Fig. 7-2

(4) Pull back the edge of the rear wheel house liner LH and detach the 3 claws (circles) by pushing the area indicated by the arrow with a finger (Fig. 7-2).

(5) Detach the clip and disconnect the rear quarter outside molding sub-assembly LH in the direction shown.



NOTE: Do not apply excessive force when pulling back the rear wheel house liner LH.

To avoid damaging the claw, do not forcibly pull the rear quarter outside molding sub-assembly LH.

(b) For Adventure Grade models, continue, otherwise skip to Step 8.

(1) Apply protective tape around the quarter outside subassembly LH (Fig. 7-3).

(2) Remove the screw (white arrow, Fig. 7-3).

(3) Remove the clip (black arrow, Fig. 7-3).

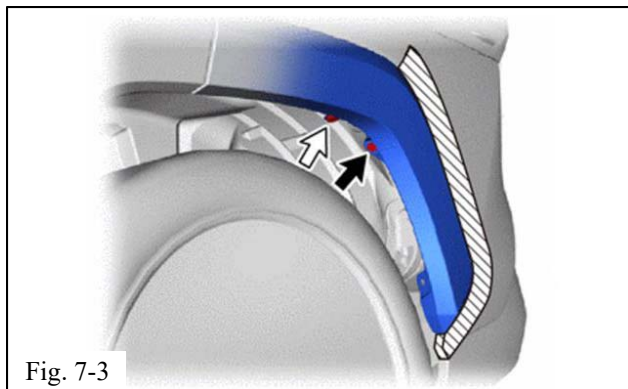


Fig. 7-3

(4) Pull back the edge of the rear wheel house liner LH and detach the guide (square in Fig. 7-4).

(5) Disconnect the rear quarter outside molding sub-assembly LH (Fig. 7-4).



NOTE: Do not apply excessive force when pulling back the rear wheel house liner LH.

To avoid damaging the clips, do not forcibly pull the rear quarter outside molding sub-assembly LH.

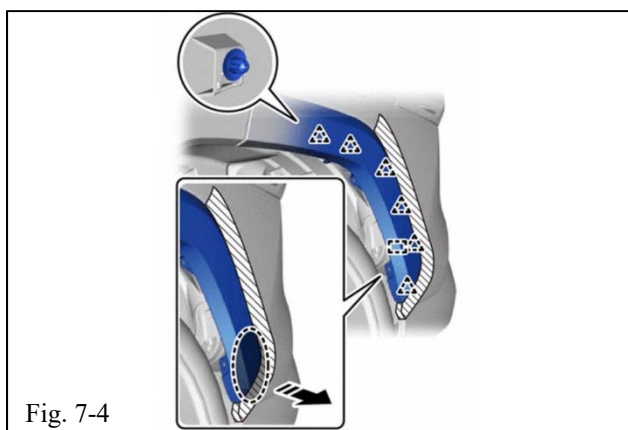


Fig. 7-4

- ⚠ (c) Set the fastening hardware aside for later use. Place the removed parts in a place where they will not be damaged.

(d) Repeat Step 7 on the right-hand side.

8. Remove the Cover Plate.

- (a) Unclip (3) molded snaps holding the cover plate next to the tail lamp to access the bumper attachment screw (Fig. 8-1) (LH shown).

⚠ **NOTE:** Unclip both cover plates by hand. Place the removed parts in a place where they will not be damaged.

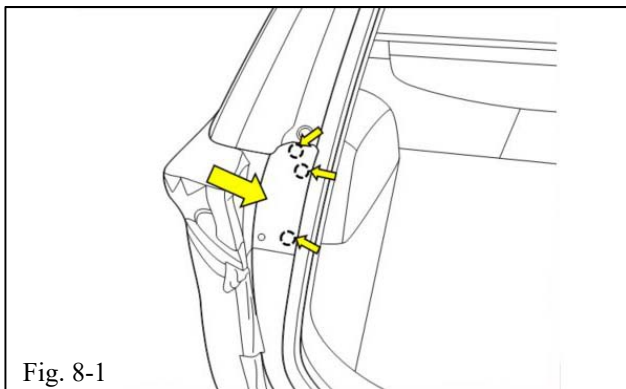


Fig. 8-1

9. Remove the Rear Bumper.

- (a) Use a Phillips #2 screwdriver to remove the (2) rear bumper upper stoppers (Fig. 9-1).

(1) Unclip both cover plates by hand.

⚠ (2) Place the removed parts in a place where they will not be damaged.

(3) Set the fastening hardware aside for reuse.

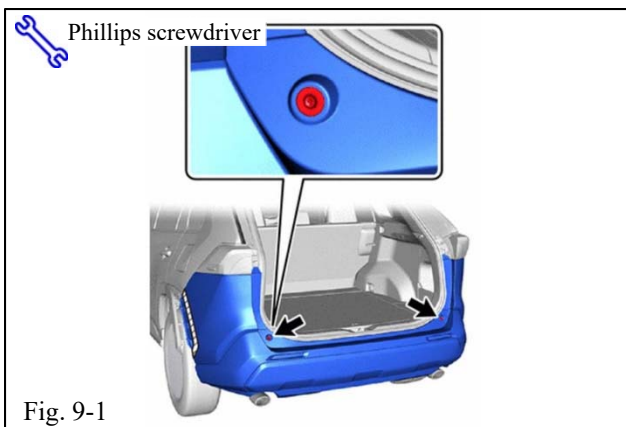


Fig. 9-1

- (b) Apply protective tape around the rear bumper assembly (Fig. 9-2).

(c) Remove the 2 screws (Fig. 9-2)

⚠ **NOTE:** Retain the fasteners for reuse.

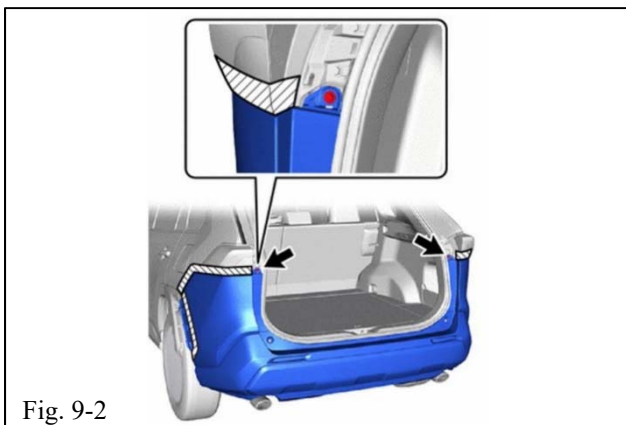
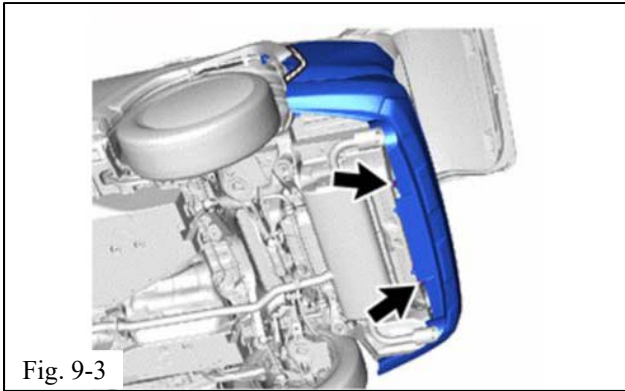
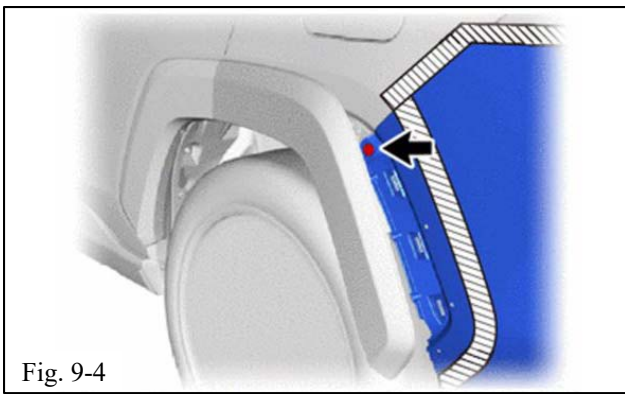


Fig. 9-2



(d) Remove the (2) clips (Fig. 9-3).

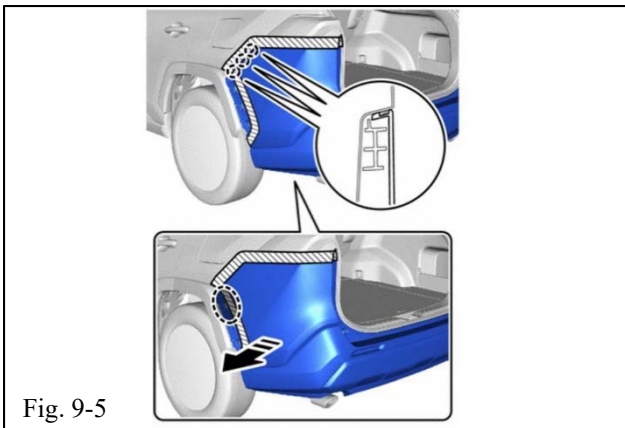


(e) Remove the clips (1 each side) (Fig. 9-4).

⚠ NOTE: Left-hand side shown.

(f) Repeat Step 9(f) on the right-hand side.

⚠ NOTE: Retain the fasteners for reuse.

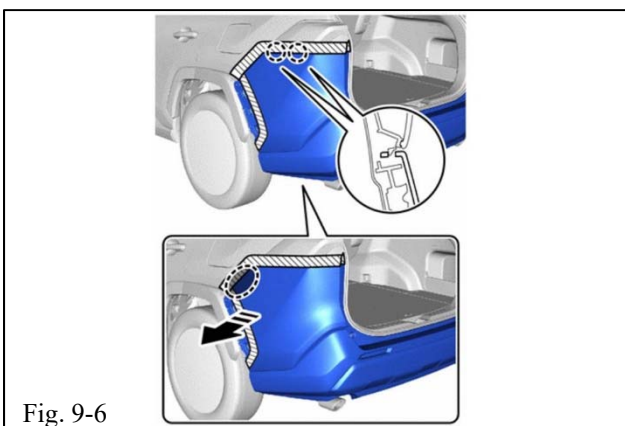


(g) Detach the (3) claws. The oval shows the recommended position for hand placement (Fig. 9-5).

⚠ NOTE: Left-hand side shown.

(h) Repeat Step 9(h) on the right-hand side.

⚠ NOTE: Retain the fasteners for reuse.



(i) Detach the (2) claws (Fig. 9-6).

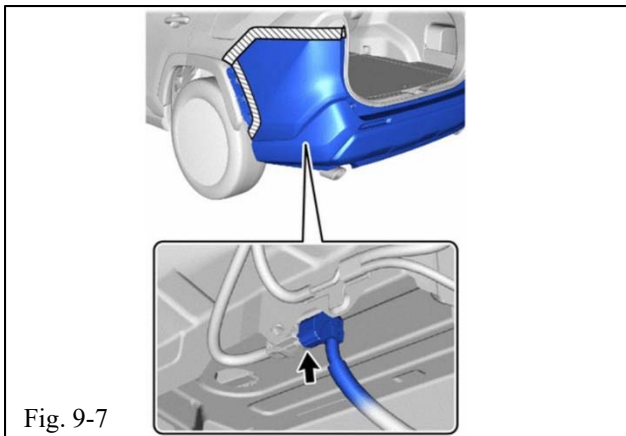


Fig. 9-7

- ⚠ (j) For vehicles with intuitive parking assist system with hands-free power rear door, disconnect the connector (Fig. 9-7).

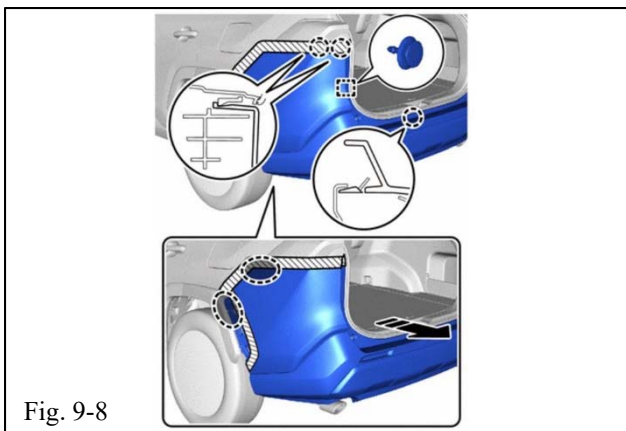


Fig. 9-8

- (k) Detach the (3) claws and (1) garnish retainer to remove the rear bumper assembly (Fig. 9-8).

⚠ **NOTE:** Left-hand side shown.

- (l) Repeat Step 9(l) on the right-hand side.

⚠ **NOTE:** Retain the fasteners for reuse. Place the removed parts in a place where they will not be damaged.

10. Remove the Rear Bumper Reinforcement Subassembly.

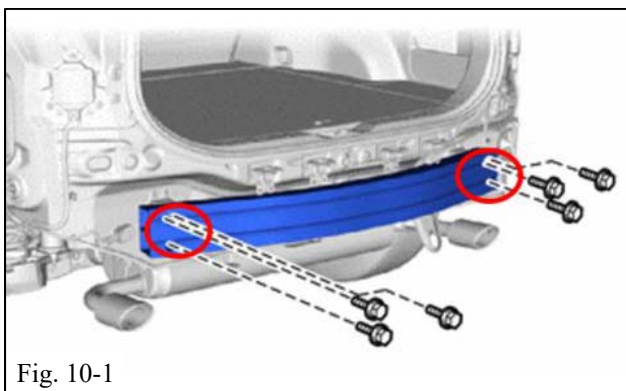


Fig. 10-1

- (a) Remove the (6) bolts (Fig. 10-1).
(b) Detach the (2) guides to remove the rear bumper reinforcement subassembly.



- (c) Remove the rear bumper reinforcement subassembly in the direction indicated (Fig. 10-2).

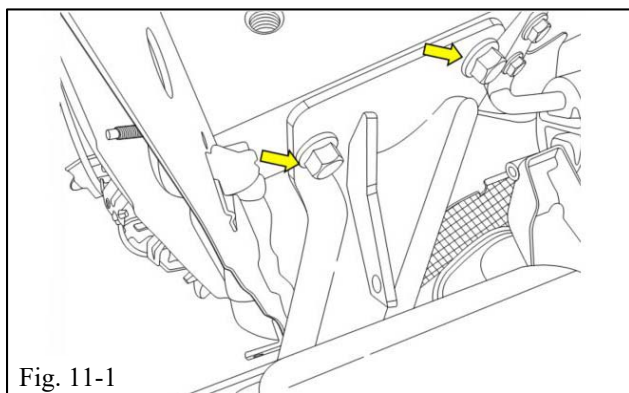
NOTE: Discard the rear bumper reinforcement subassembly and bolts.

11. Remove the Tie-down Hook (If Equipped).

- (a) Remove the (2) M12 bolts attaching the tie-down hook from the right-hand side floor member (Fig. 11-1).

NOTE: Discard the tie-down hook and replace the bolts in the holes.

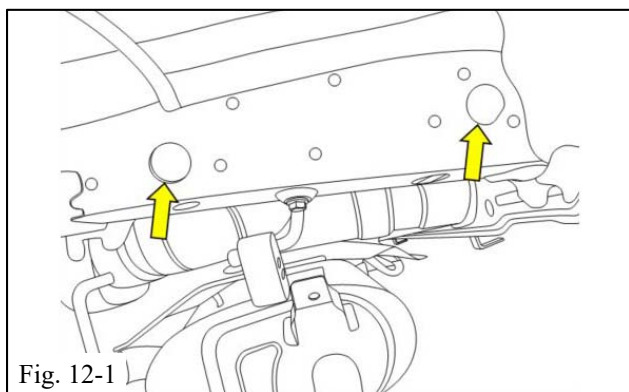
Torque: 66 N·m (49 ft·lbf)



12. Remove the Plug Hole Stickers.

- (a) Remove the (8) plug hole stickers from the chassis rails, (4) on each rail (2 inboard and 2 outboard), both left-hand side and right-hand side to expose the M12 mounting weld nuts (Fig. 12-1).

NOTE: Fig. 12-1 shows the location of the two plugs located on the left-hand outboard side of the vehicle body chassis rails. Repeat for the other locations and discard the plug hole stickers.



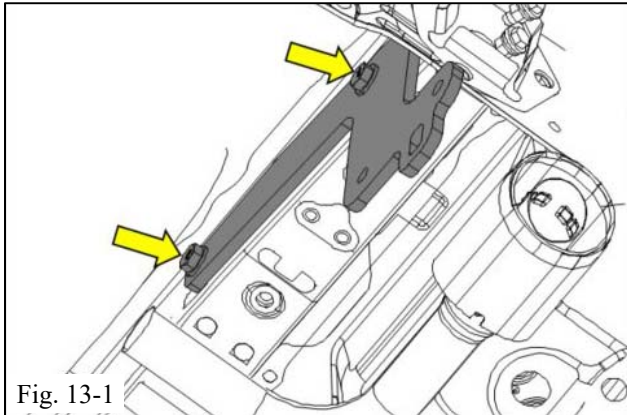


Fig. 13-1

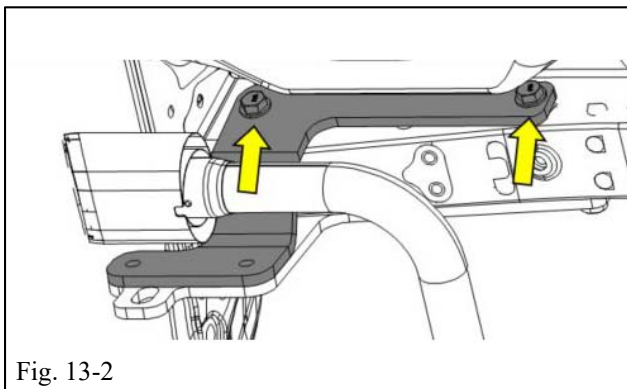


Fig. 13-2

13. Install the Bolt-on Side Arm.

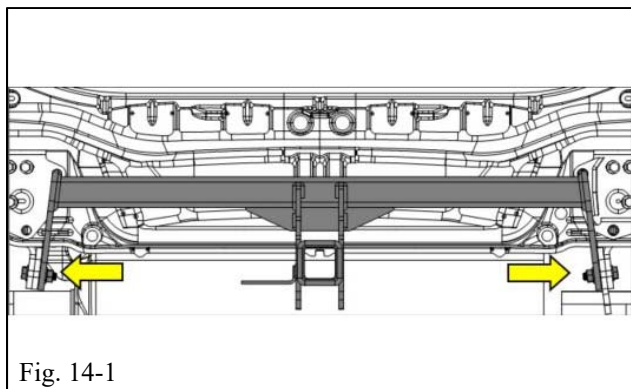
- (a) Fit the (4) M12x30 bolts (Item 4 in the hardware bag table), with (4) washers (Item 2 in the hardware bag table) (Fig. 13-1).
- (b) Loosely secure the inboard and outboard sidearms on the right-hand side (Items #5 and #7 in the Kit Contents table).

! NOTE: Fig. 13-1 shows the right-hand inboard side of the chassis rail.

- (c) Fit the (4) M12x30 bolts (Item 4 in the hardware bag table), with (4) washers (Item 2 in the hardware bag table).
- (d) Loosely secure the inboard and outboard sidearms on the left-hand side (Items #4 and #6 in the Kit Contents table).
- (e) Tighten all bolts on both right-hand side and left-hand side (Fig. 13-2).

! NOTE: Fig. 13-2 shows the right-hand chassis rail outboard.

- (f) Repeat on the right-hand chassis rail inboard.
- (g) Repeat on the left-hand chassis rail outboard and inboard.



14. Install the Tow Hitch Welded Assembly.

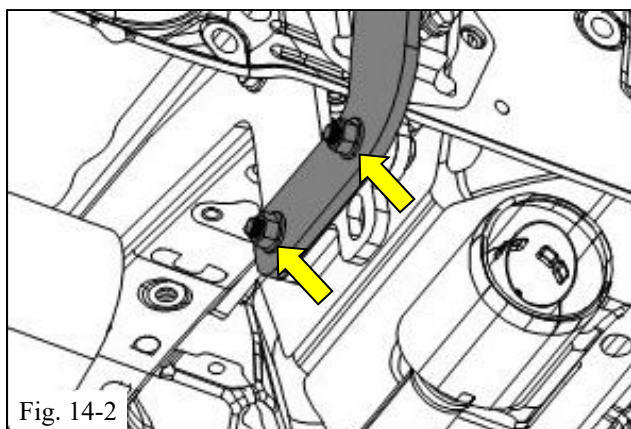
- (a) Use (4) M12x50mm bolts, (4) M12 nuts & (8) washers (Items 3, 1, & 2 in the hardware bag table) to loosely attach and align the Tow Hitch Welded Assy (Item #1 in the Kit Contents table) to the side arms (Items #6 & #7 in the Kit Contents table) (Fig. 14-1).

CAUTION: This step requires two people to lift and hold Tow Hitch Welded Assy.

NOTE: Use a washer (Item 2 in the hardware bag table) under each bolt head (Item 3 in the hardware bag table) and under each nut (Item 1 in the hardware bag table).

NOTE: The inboard of the right-hand chassis rail is shown Fig. 14-2. The installation is identical on the left-hand side (See Fig. 14-1).

- (b) Tighten the bolts between the right-hand and left-hand sidearms to the tow hitch welded assembly.

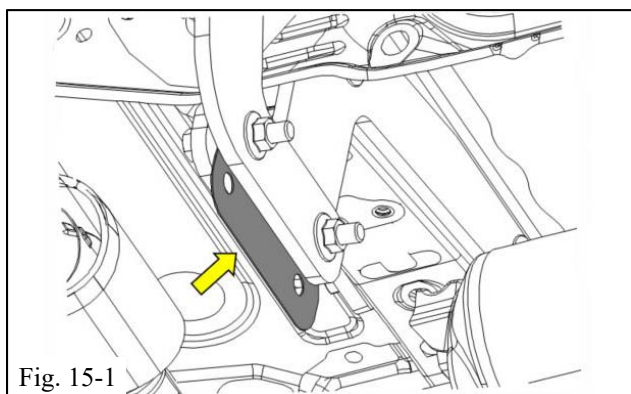


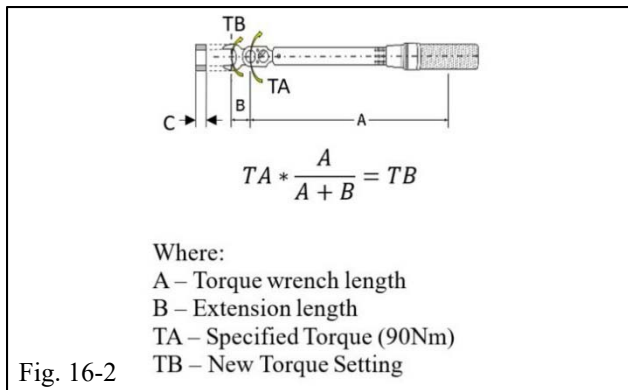
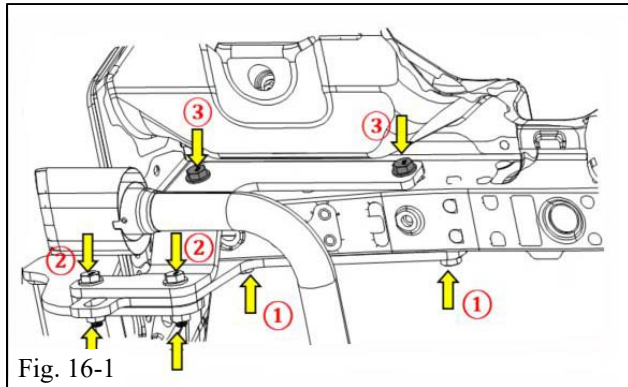
15. Install the Shim.

- (a) On the left-hand side, place (2) 1mm shims (Item #3 in the Kit Contents table) between the side arms and the center section's end plate (Fig. 15-1).

NOTE: If 2 shims fit on the left-hand side, use 1 shim per side. If only one shim fits on the left-hand side, NO shims are needed.

- (b) Loosely tighten the right-hand side and the left-hand side sidearm and tow hitch bolts.





16. Torque the Bolts.

- (a) On the right-hand side, start with (2) chassis attachment bolts marked ①, and then (2) side arm attachment bolts marked ② and then the (2) attachment bolts marked ③ on the outer side-arm in (Fig. 16-1).

NOTE: The right-hand side is shown.

- (b) Repeat Step 16(a) on the left-hand side.

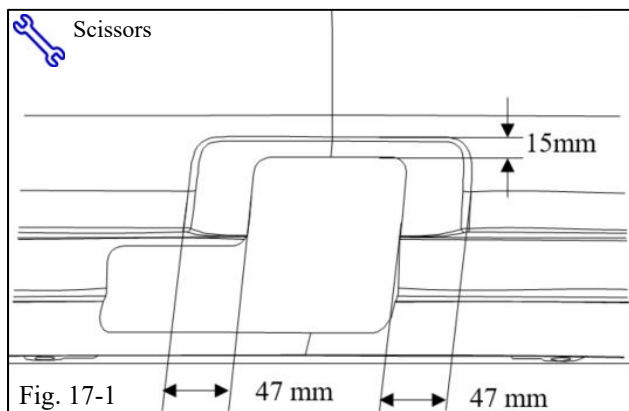
STOP (c) Due to limited clearance to the vehicle body, for bolts on the outer side-arm marked with ③, use an open-end torque wrench head and torque wrench (Fig. 16-2).

- (d) Use the calculation in Fig. 16-2 to set the torque for the bolts marked ③.

S Torque the fasteners ① and ②: 90 N·m (66 ft·lbf).

S Torque bolts ③: TB, the New Torque Setting, calculated with the formula in Figure 16-2, where Specified Torque is 90 N·m (66 ft·lbf).

STOP **NOTE:** If an extension tool or SST is combined with a torque wrench and used to tighten to a torque specification, the actual torque will be excessive, and parts will be damaged.



17. Trim the Bumper Cover.

- Cut the bumper cover per the details attached in the template.
- Ensure the template is centered to the rear bumper fascia cross-car and joined, as indicated (Fig. 17-1).

NOTE: Check that the dimensions on the template are correct with a ruler to scale.

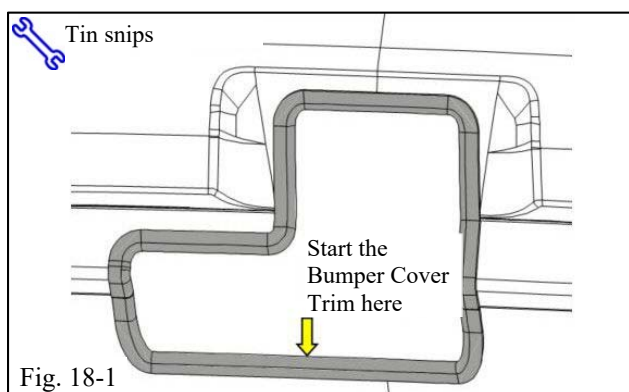
18. Attach the Bumper Cover Trim.

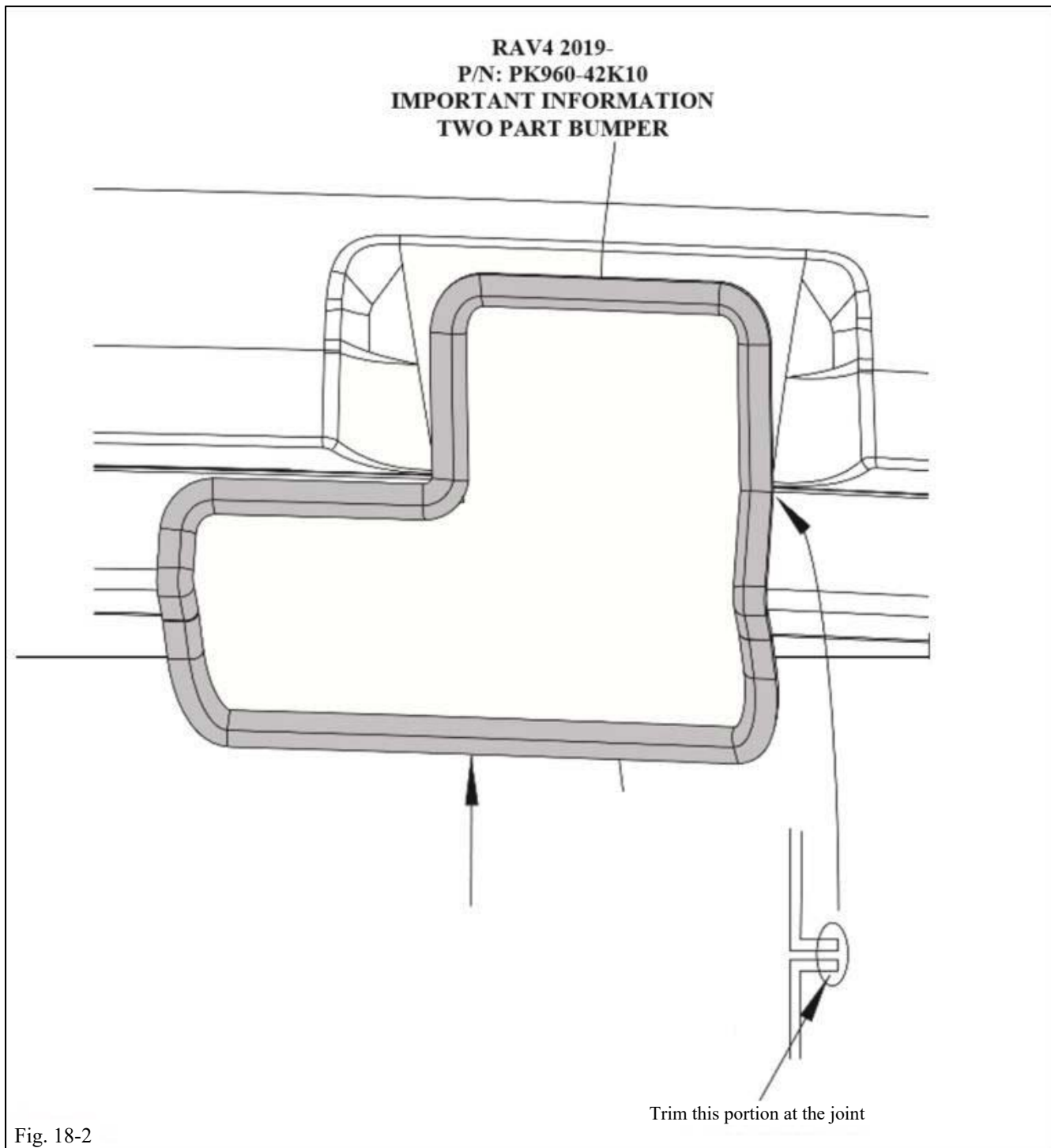
- Obtain the Bumper Cover Trim (Item #11 in the Kit Contents table).

CAUTION: Be careful with sharp edges on each pinch weld extremities. Wear gloves.

- Ensure the bumper cover cut has a clean surface before placing the Bumper Cover Trim.
- Start at the location shown by the arrow in Fig. 18-1 and install the Bumper Cover Trim around the perimeter until the loop is closed. Ensure sufficient force is applied at the corners.
- Cut off and dispose the spare length of the Bumper Cover Trim.

NOTE: If the rear bumper fascia is composed of an upper and lower piece, trim the inside at the join line between the upper and lower. Make sure the join line is fully cut.





RAV4 2019-
P/N: PK96042-K10
IMPORTANT INFORMATION
ONE PART BUMPER

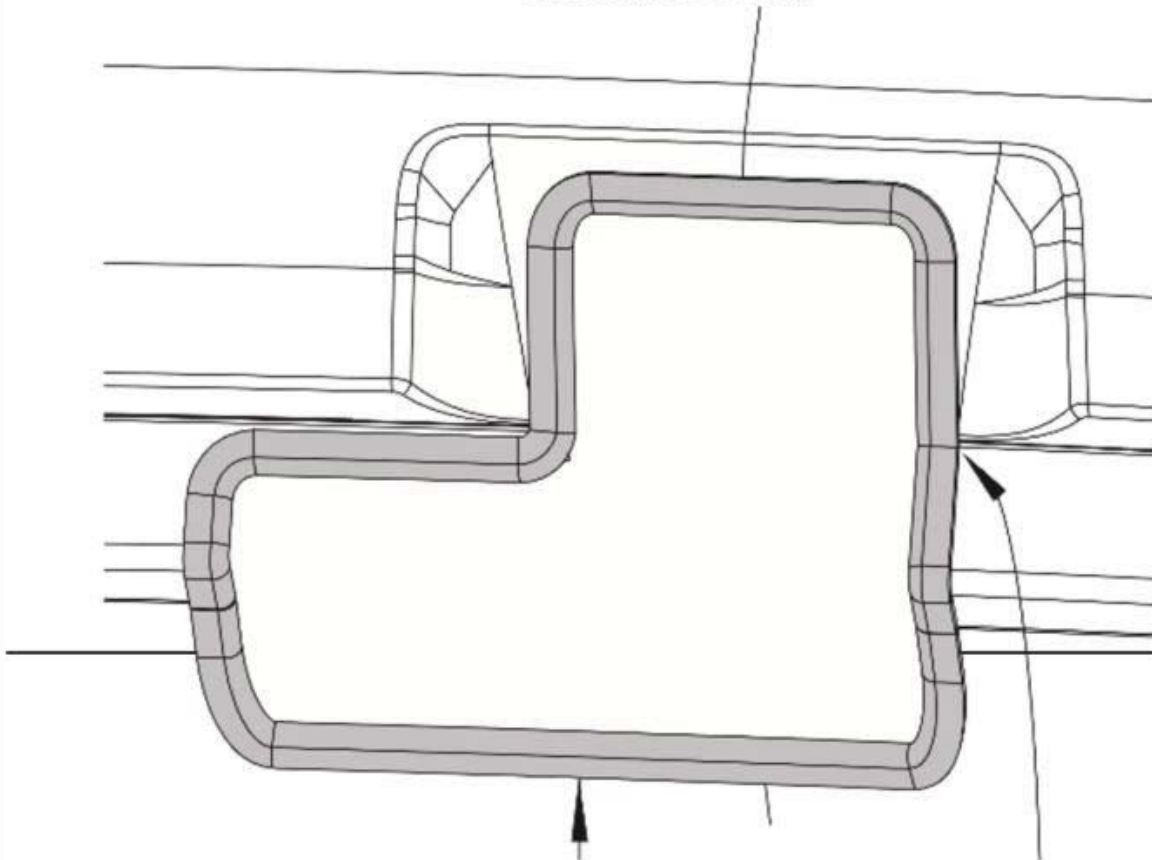


Fig. 18-3

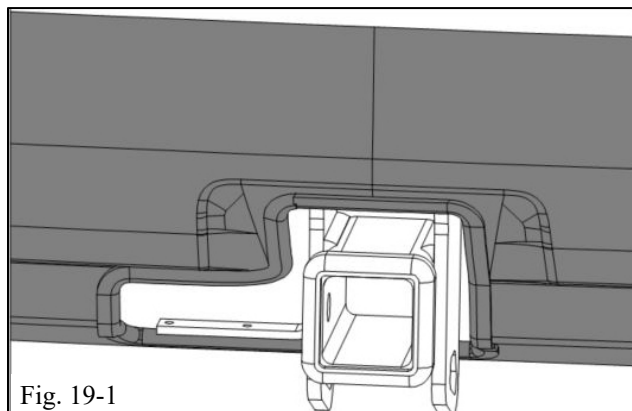


Fig. 19-1

19. Reinstall the Bumper.

- (a) Follow Steps 5 through 9 in reverse and use the original fasteners to reinstall the bumper onto the vehicle (Fig. 19-1).
- (b) Remove the shop towel from the exhaust pipe.
- (c) Remove the applied vehicle protective tape.

- ⚠ (d) When tightening the mudguard screws/bolts, push the rear mudguard onto the quarter panel to reduce the gap between the rear mudguard and the panel. Check that the rear mudguards do not wobble.

⚠ **NOTE:** Ensure all electrical connectors and harnesses are reconnected prior to refitting to the bumper cover.

- (e) The trailer wire harness 4-pin connector bracket and the 4-flat connector installation is described in the Tow Hitch Wire Harness Installation Instructions (Fig. 19-2).

⚠ **NOTE:** Refer to the Trailer Wire Harness 4-pin connector instructions.

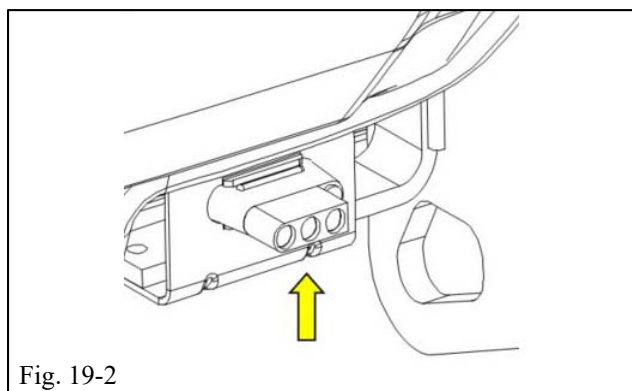


Fig. 19-2

20. Perform a Test Fit.

- (a) Test fit and insert the Ball Mount (Item #2 in the Kit Contents table) into the Tow Hitch Receiver (Fig. 20-1).
- (b) Secure the Ball Mount with the Pin (Item #8 in the Kit Contents table) (Fig. 20-1).
- (c) Secure the Pin with the R-clip (Fig. 20-1).

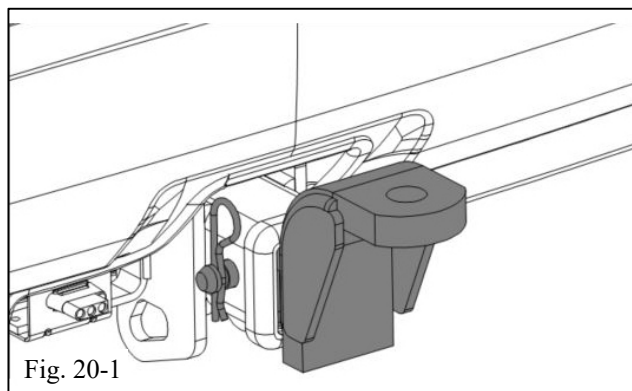
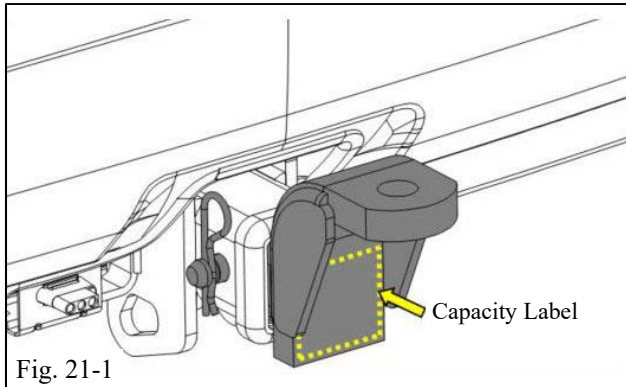


Fig. 20-1



21. Clean and Prepare the Mounting Ball.

- ⚠ (a) Clean the metal surface of the Ball Mount where the Capacity Label (Item #12 in the Kit Contents table) will be placed (Fig. 21-1).




- (b) Place and affix Capacity Label and apply pressure (Fig. 21-2).
- (c) Remove the R-clip and the Pin, then remove the Ball Mount. Place the Ball Mount inside the vehicle.


22. Install the Hitch Plug.

- (a) Install the Hitch Plug (Item #10 in the Kit Contents table) in the Tow Hitch Receiver (Fig. 22-1).



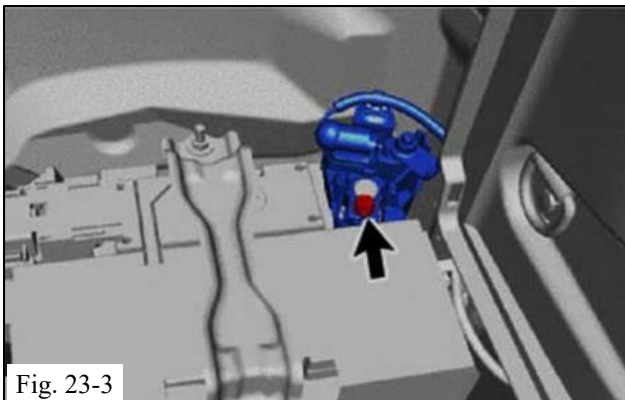
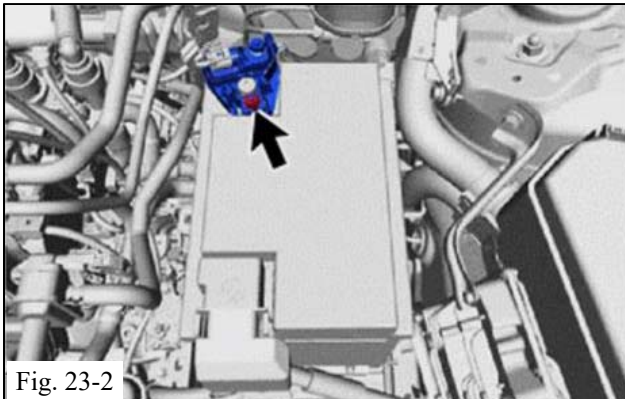
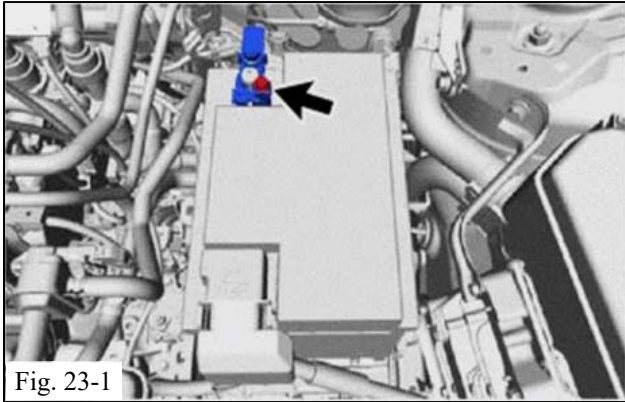
23. Reinstall the Negative (-) Battery Terminal.

-  (a) Reinstall the vehicle's negative (-) battery cable to battery terminal.
- (b) Torque the nut of the negative (-) battery terminal (Gas, without Stop-Start System, Fig. 23-1; Gas, with Stop-Start System, Fig. 23-2; HV, Fig. 23-3)

 Torque: 5.4 N·m (48 in·lbf)

24. Reinstall the Removed Parts.

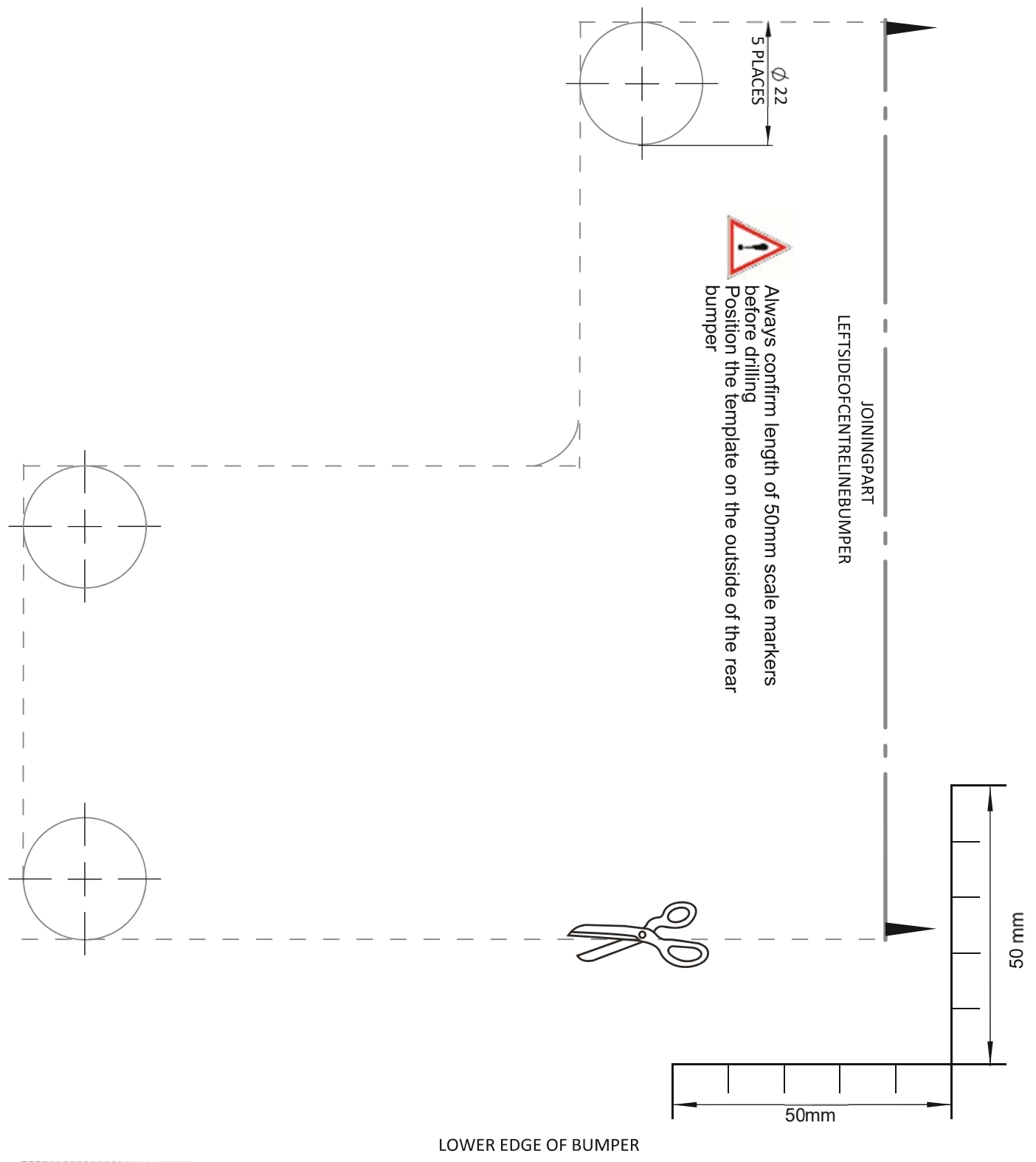
- (a) Reinstall all parts previously removed, in the reverse order using all the fasteners retained.
- (b) Verify that no fasteners are remaining unused.
- (c) Verify if the parts fit together with no uneven gaps between them.
- (d) Remove vehicle protective tape.



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

<p><u>Check:</u></p>	<p><u>Look For:</u></p>
<p><u>Accessory Function Checks</u></p> <p><input type="checkbox"/> Bolt Torque</p>	<p>Ensure bolts for the Towing Hitch are tightened to the Torque Values Specified:</p> <p>Torque bolts marked ① and ② in Step 16 to 90 N·m (66 ft·lbf).</p> <p>Torque bolts marked ③ in Step 16, to TB (New Torque Setting), calculated using the formula in Fig. 16-2.</p>
<p><u>Vehicle Function Checks</u></p> <p><input type="checkbox"/> Negative (-) Battery Terminal</p> <p><input type="checkbox"/> Hitch Plug</p> <p><input type="checkbox"/> Ball Mount</p> <p><input type="checkbox"/> Capacity Label</p>	<p>5.4 N·m (48 in·lbf)</p> <p>Confirm Hitch Plug is installed in the Tow Hitch Receiver.</p> <p>Ball Mount stored securely within vehicle</p> <p>Confirm the capacity label is installed.</p>
<p><u>Vehicle Appearance Check</u></p> <p><input type="checkbox"/> After accessory installation and removal of protective cover(s), perform a visual inspection.</p>	<p>Ensure no damage (including scuffs and scratches) was caused during the installation process.</p> <p>(For PPO installations, refer to TMNA Accessory Quality Shipping Standard.)</p>

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