

TECHNICAL INSTRUCTIONS
FOR
SAFETY RECALL 25TA15

LOOSE INVERTER BOLT

CERTAIN

2025 – 2026 MODEL YEAR CAMRY HV

The repair quality of covered vehicles is extremely important to Toyota. All dealership technicians performing this Recall are required to successfully complete the most current version of the E-Learning course “Safety Recall and Service Campaign Essentials”. To ensure that all vehicles have the repair performed correctly; technicians performing this Recall repair are required to have completed the course below:

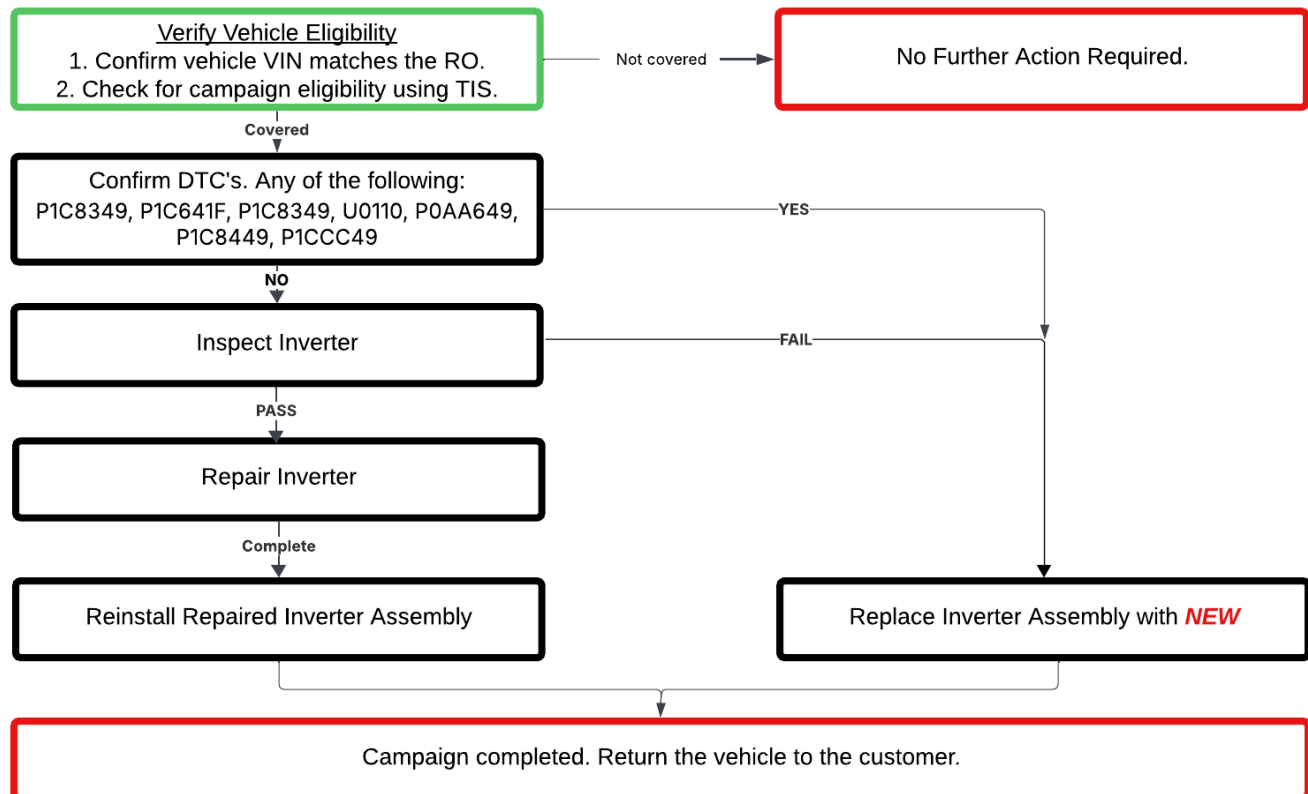
TIC209A - Electrified Powertrain Vehicle Repair

It is the dealership’s responsibility to select technicians with the above course level or greater to perform this Recall repair. Carefully review your resources, the technician skill level, and ability before assigning technicians to this repair. It is important to consider technician days off and vacation schedules to ensure there are properly trained technicians available to perform this repair at all times.

I. OPERATION FLOW CHART

[↶ Return to Table of Contents](#)

Flow chart is for reference only. **DO NOT** use in place of full technical instruction. Follow ALL steps as outlined in full technical instruction to confirm campaign is completed correctly.



II. IDENTIFICATION OF AFFECTED VEHICLES

[↪ Return to Table of Contents](#)

1. CHECK VEHICLE FOR CAMPAIGN ELIGIBILITY

- Compare the vehicles VIN to the VIN listed on the Repair Order to ensure they match.
- Check the TIS Vehicle Inquiry System to confirm the VIN is involved in this Campaign, and that it has not already been completed.

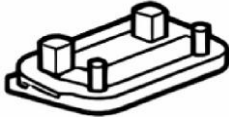
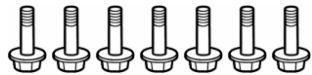
Note:

TMNA warranty will not reimburse dealers for repairs completed on vehicles that are not affected or were previously completed, even by another dealer.

III. PREPARATION

[↪ Return to Table of Contents](#)

1. PARTS

Parts below are required for repair of inverter assembly only. (Forecast 80% UIO)				
Repair Kit	Name	Quantity	Description	Image
04006-03128	Cover	1	Non-reusable part	
	Bolt, flange	7	Non-reusable part	
	Clamp	1	Non-reusable part	
00295-1282C	FIPG Kit	½ tube	½ tube per repair	
00272-SLLC2	SUPER LONG LIFE COOLANT	½ gal	(1/2 gal. per repair)	

California Emissions Only				
00410-92007	Vehicle emissions recall form booklet	1	Vehicle emissions recall form booklet	
00451-00001	Emissions label	1	Emissions label	

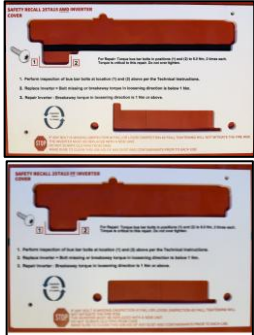
Parts required for inverter replacement if fails inspection or car comes in with DTC (Forecast is 20% of UIO)			
Primary Part Number	Alternate Part number if Primary is not available for order	Part Name	Quantity
04006-01106	04005-63106	HV FF Inverter Assy	1
04006-01206	04005-63206	HV AWD Inverter Assy	1
00272-SLLC2	N/A	SUPER LONG LIFE COOLANT	1

All inverter part numbers above are on MAC D.

Please include the following information in your MAC parts release email. See MAC report for additional release detail.

1. Dealer Code
2. Part number
3. Quantity
4. VIN
5. Contact Information
6. Reason for replacement
7. If any of the following DTCs are present upon initial health check, P1C8349, P1C641F, P1C8349, U0110, P0AA649, P1C8449, P1CCC49. Please upload screen shot of the health check showing the VIN and the DTC.

2. TOOLS, SUPPLIES, EQUIPMENT, SST, AND CST (Campaign Service Tool)

Campaign Service Tools (CST)					
These tools were distributed for 25TA15 and are not part of SST cabinets.					
Item No.	Part Number	Name	Quantity	Description	Image
1	00002-02955	Torque wrench (CST)	1	Beam Style Torque wrench	
2	FF AWD	Inverter Cover (AWD and FF) CST	2	Cover used during inspection of inverter to prevent debris from entering.	

Supplies Locally Sourced by Dealer					
Item No.	Part Number	Name	Quantity	Description	Image
1	91551-80650 (can be sourced from local hardware store)	Bolt	4	Stand jig Hex Bolt, flange, M6x1.0x50mm	
2	N/A (can be sourced from local hardware store)	Bolt	1	Socket head cap screw, M5x18mm, Used to separate inverter	
3	(can be sourced from local hardware store)	Chair rubber feet	2	Rubber stopped	
4	(can be sourced from local hardware store or shipping crate)	Clean wood block	1	Clean wood block	

****Standard hand tools, plus the following:**

• Insulated Tool Set	• Torque wrench
• Voltmeter Set	• Crows foot
• GTS+ (Global Tech Stream+)	• DCA-8000 Battery Diagnostic Station

Special Service Tools (SST Cabinets)					
1	09891-28010-01	SST	1	HEV inverter guide pins	
2	09890-47011	SST	1	Desktop Anti-Static Mat Set	
3	90339-16002	SST	1	Plug set, inverter core	
4	00002-03100-S	SST	1	Lineman gloves class 0 Size - small	
	00002-03200-M			Lineman gloves class 0 Size - medium	
	00002-03300-L			Lineman gloves class 0 Size - large	

3. MATERIALS

• Vinyl tape	• Protective Gloves	• Protective Tape
• Masking tape	• Piece of wood	• Antistatic gloves

IV. SAFETY CHECKLIST & PRECAUTIONS WHEN WORKING

[↪ Return to Table of Contents](#)



- Always remember **“SAFETY FIRST”**
- Be extremely careful when handling high voltage components
- Before beginning and while working on the high voltage system, perform the following safety check list.

1. BASIC SAFETY

- ☐ Extreme care will be used when handling high-voltage components
- ☐ No excessive force will be applied to the inverter assembly

2. WORK AREA / FOREIGN MATERIAL CONTROL

- ☐ Work area is clean and free of dust and airborne contaminants
- ☐ No grinding, welding, or chemical spraying nearby
- ☐ Inverter cover installed at all times except when applying FIPG.

3. STATIC ELECTRICITY

- ☐ Static electricity discharged by touching grounded vehicle metal/using antistatic mat.
- ☐ Connector terminals / circuit boards will not be touched unless specified

4. ELECTRICAL SHOCK & SHORT-CIRCUIT PREVENTION

- ☐ Auxiliary battery and service grip disconnected ≥ 5 minutes
- ☐ Service grip stored securely to prevent reinstallation
- ☐ No metal items worn (rings, watches, etc.)
- ☐ Electrical insulating gloves worn near high-voltage components
- ☐ Gloves are clean, dry, and undamaged
- ☐ Tools insulated as required

5. TOOLS & HANDLING

- ☐ No air or power tools used after inverter removal
- ☐ High-voltage connectors covered immediately after disconnection
- ☐ Parts, bolts, and tools will not be dropped into inverter
- ☐ Dropped object inside inverter = inverter replacement (acknowledged)

6. PARTS & INSTALLATION

- ☐ Removed parts kept clean and organized
- ☐ Impacted or dropped parts will be replaced
- ☐ Terminals confirmed clean before installation
- ☐ All fasteners will be torqued to specification

7. WORK CONTROL

- ☐ Intermediate inspections will be performed
- ☐ Safety supervisor assigned
- ☐ “Working with High Voltage” warning sign installed
- ☐ If pausing work, cover parts with clean pieces of paper to prevent entry of dust and foreign matter.

8. INSTALLATION SUPPORT

- ☐ Parts arranged in removal order
- ☐ Reference photos taken before disassembly



Person in charge: _____
high voltage system
Working on
CAUTION:

CAUTION:
Working on
high voltage system
Person in charge: _____

Fold this page and place on the roof of vehicle.

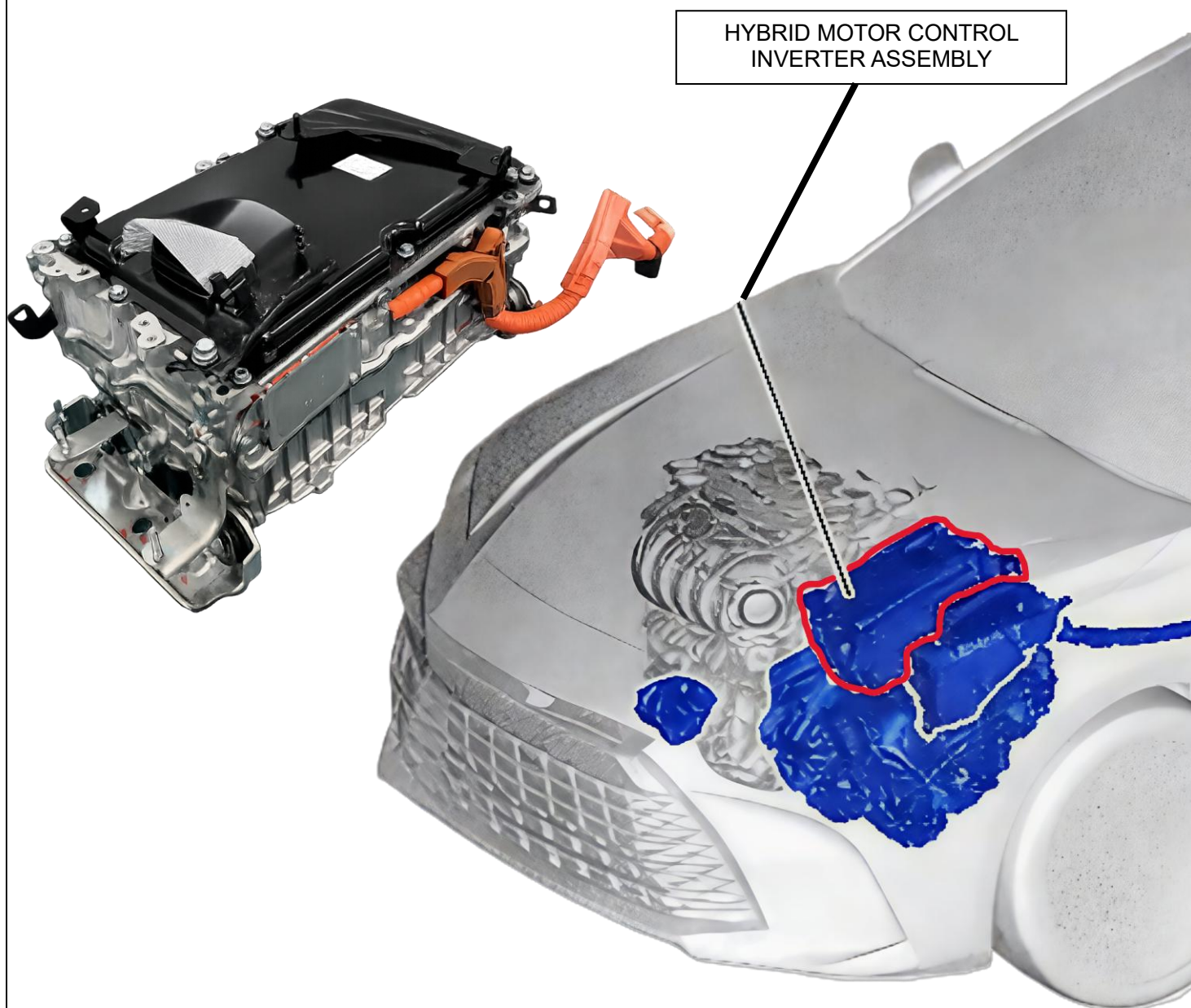
V. WORK PROCEDURE TABLE OF CONTENTS

I.	OPERATION FLOW CHART -----	2
II.	IDENTIFICATION OF AFFECTED VEHICLES -----	3
III.	PREPARATION -----	3
IV.	SAFETY CHECKLIST & PRECAUTIONS WHEN WORKING-----	7
V.	WORK PROCEDURE TABLE OF CONTENTS -----	9
VI.	BACKGROUND -----	10
VII.	COMPONENTS -----	11
VIII.	REMOVE THE INVERTER FROM THE VEHICLE -----	12
IX.	INVERTER SUB-ASSEMBLY PREP FOR DISASSEMBLY -----	33
X.	INVERTER SUB-ASSEMBLY DISASSEMBLY -----	40
XI.	INSPECTION OF SUSPECT LOOSE BUS BAR BOLTS -----	45
XII.	INVERTER REPAIR FOR <i>PASS</i> INSPECTION JUDGEMENT INVERTER:-----	52
XIII.	ASSEMBLY OF THE INVERTER (NEW/REPAIRED)-----	61
XIV.	INSTALLING THE REPAIRED/REPLACED INVERTER IN THE VEHICLE -----	66
XV.	APPENDIX -----	89

VI. BACKGROUND

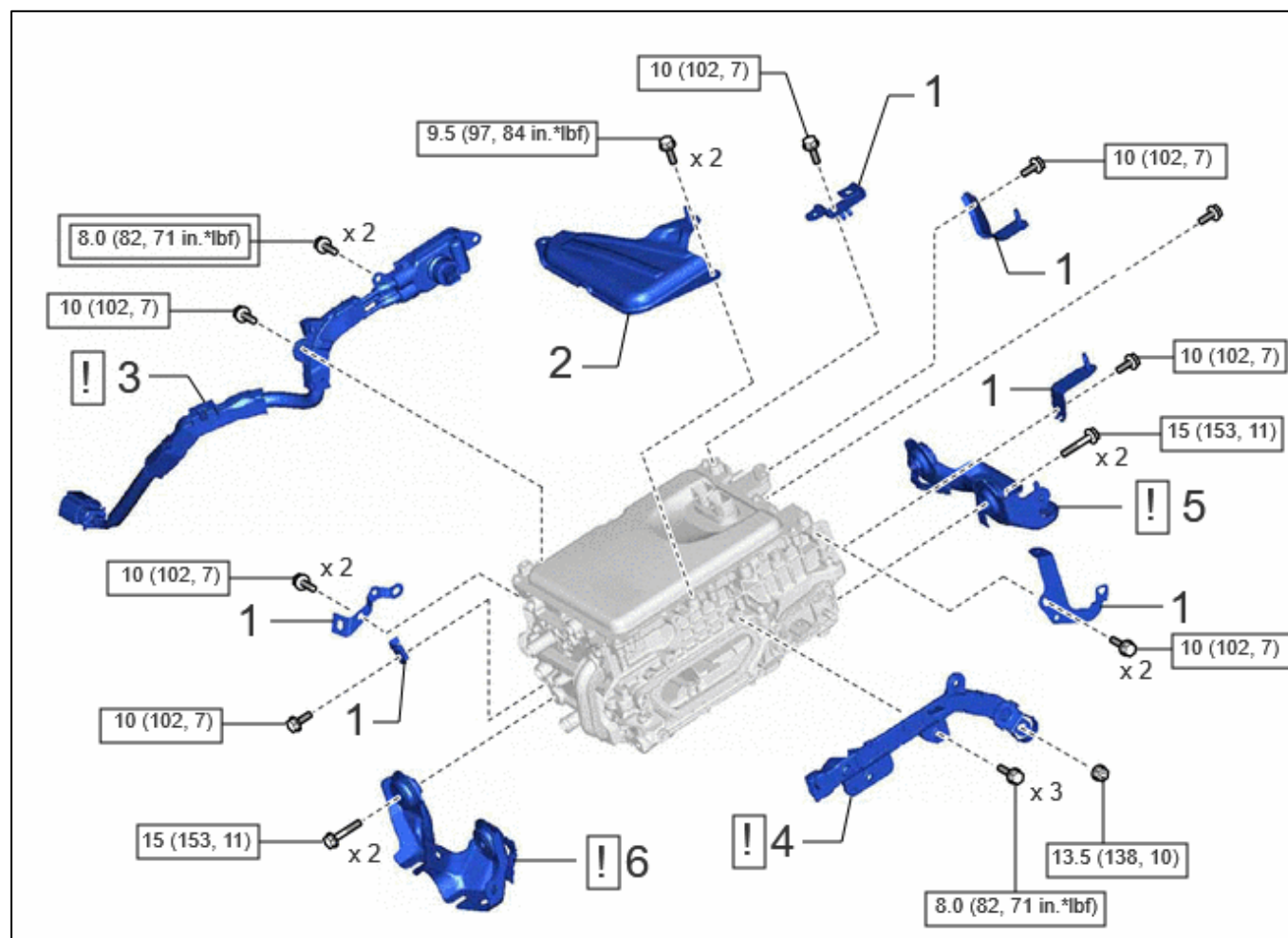
[↪ Return to Table of Contents](#)

A bolt inside the inverter in the hybrid powertrain can become loose and could lead to a loss of motive power or could lead to a fire when the vehicle is on. A loss of motive power while driving at higher speeds or a vehicle fire could increase the risk of a crash or an injury.



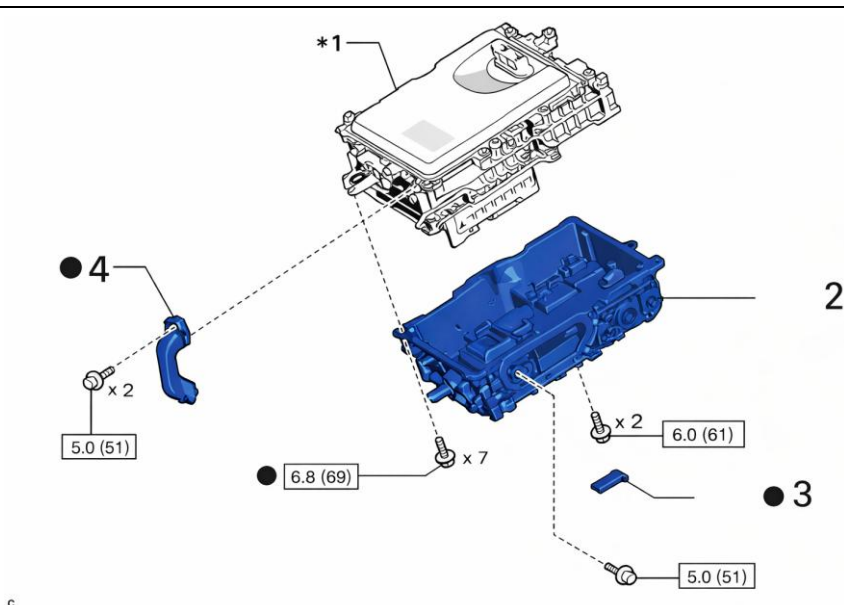
VII. COMPONENTS

[↶ Return to Table of Contents](#)



	Description	Bolt/nut Count	Torque value (Nm)
1	WIRE HARNESS CLAMP BRACKET	9	10
2	INVERTER PROTECTOR	2	9.5
3	HV AIR CONDITIONING WIRE	2	8.0
		1	10
4	INVERTER BUS-BAR PLATE SUB-ASSEMBLY	3	8
		1	13.5
5	NO. 2 INVERTER BRACKET	2	15
6	NO. 1 INVERTER BRACKET	2	15

	Tightening torque for "Major areas involving basic vehicle performance such as moving/turning/stopping" : N*m (kgf*cm, ft.*lbf)
	N*m (kgf*cm, ft.*lbf): Specified torque



	Description	Bolt/nut Count	Torque value (Nm)
1	Inverter Case Sub Assy	2	6.0
2	Converter Case Sub Assy (non-reusable)	7	6.8
3	Inverter drain plug,	2	6.0
	three phase bus bar	1	5.0
4	Inverter cooling pipe	2	5.0

VIII. REMOVE THE INVERTER FROM THE VEHICLE

[↶ Return to Table of Contents](#)



Orange wire harnesses and connectors indicate high-voltage circuits. To prevent electric shock, always follow the procedure described in the repair manual. To prevent electric shock, wear insulated gloves when working on wire harnesses and components of the high voltage system.

NOTICE:

After the ignition switch is turned off, there may be a waiting time before disconnecting the negative (-) auxiliary battery terminal.

- After disconnecting the negative (-) auxiliary battery terminal or after a fully depleted battery is returned to normal, the first READY ON may not be possible. In this case, perform the READY ON operation again.
- After the ignition switch is turned off, the audio and visual system records various types of memory and settings. As a result, after turning the ignition switch off, make sure to wait at least 3 minutes before disconnecting the cable from the negative (-) auxiliary battery terminal.
- When the cable is disconnected from the negative (-) auxiliary battery terminal and the security lock setting has been enabled, multi-display operations will be disabled upon next startup unless the password is entered. Be sure to check the security lock setting before disconnecting the cable from the negative (-) auxiliary battery terminal.

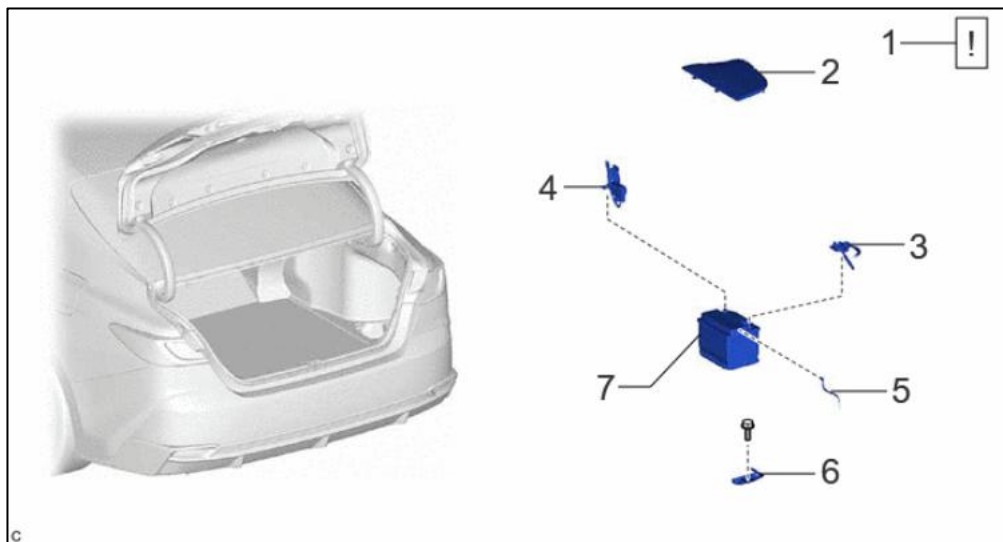
[Click here](#)

INFO

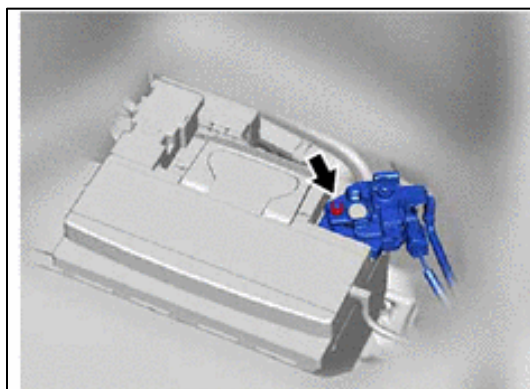
HINT:

When the cable is disconnected/reconnected to the auxiliary battery terminal, systems temporarily stop operating. However, each system has a function that completes learning the first time the system is used.

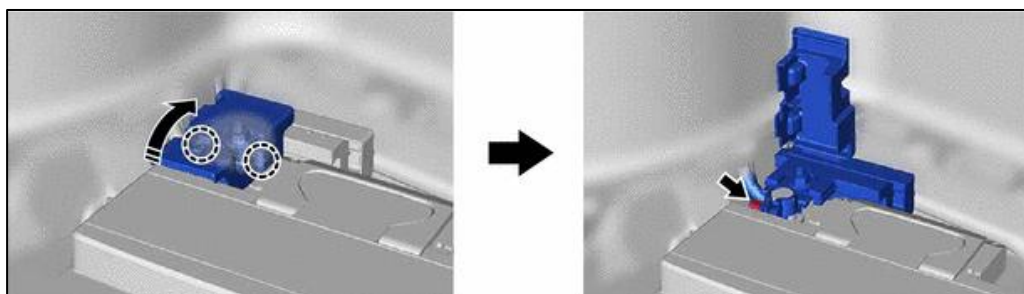
1. DISCONNECT THE NEGATIVE AUXILIARY BATTERY TERMINALS.



- a) Open trunk
- b) Remove luggage trim service hole cover

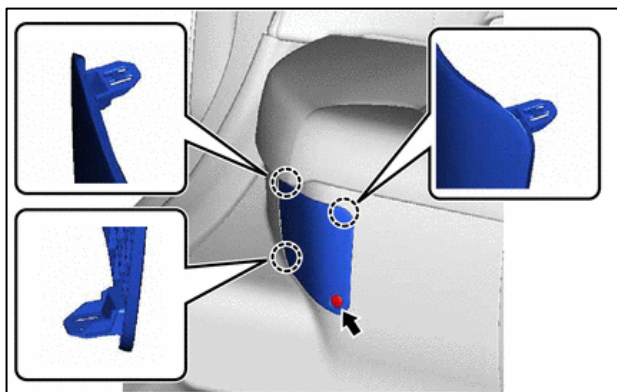


- c) Disconnect cable from negative auxiliary battery terminal



- d) Disconnect cable from positive auxiliary battery terminal

2. DISCONNECT THE SERVICE PLUG GRIP



- a) Remove battery service hole cover RH, Small screwdriver is needed.

NOTICE:

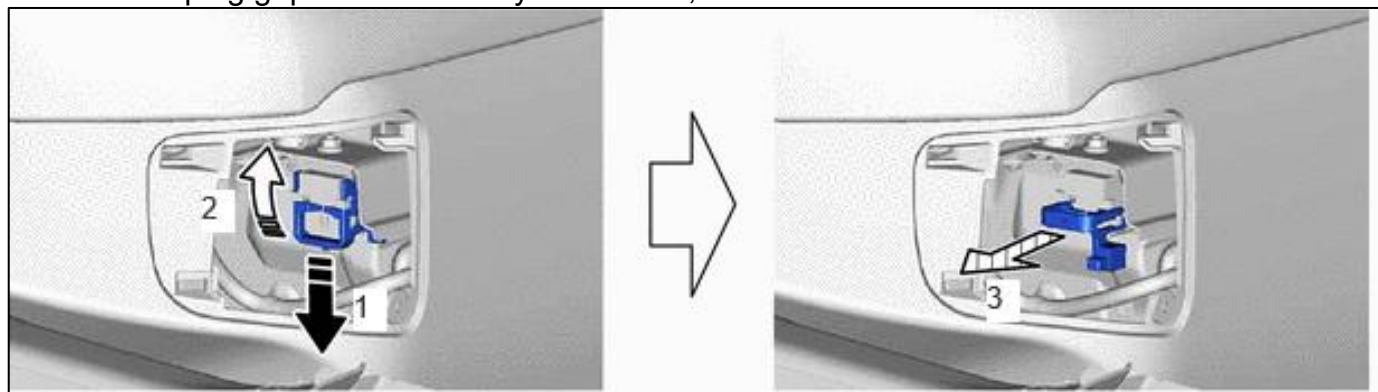
- After removing the service plug grip, turning the power switch on (READY) may cause a malfunction. Do not turn the power switch on (READY) unless instructed by the repair manual.
- Do not touch the terminals of the service plug grip.
- If the service plug grip has been struck or dropped, replace it.

CAUTION:

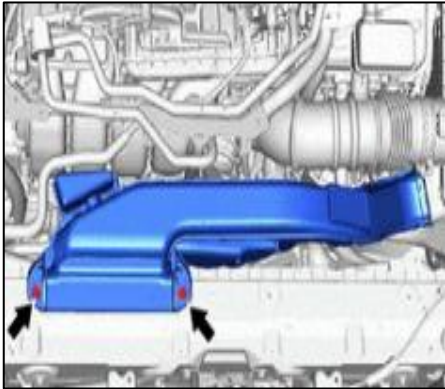
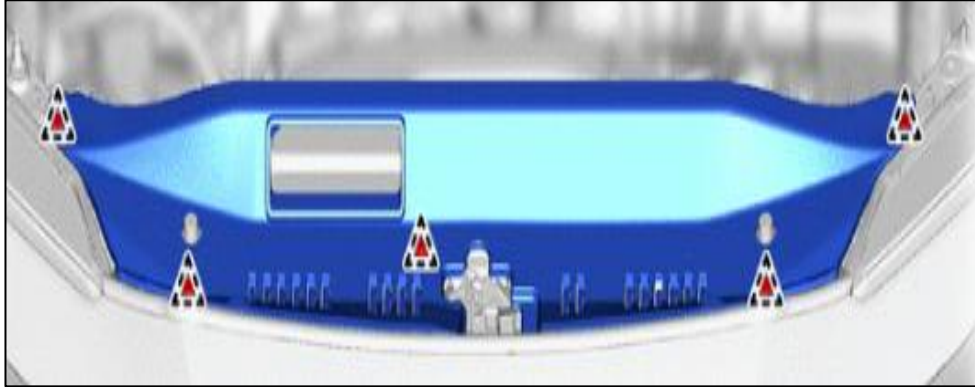
- Be sure to wear insulated gloves.
- Do not inspect or service the high voltage system with the service plug grip installed.
- To reduce the risk of electric shock, make sure to remove the service plug grip to cut off the high voltage circuit before servicing the vehicle.
- To reduce the risk of electric shock, make sure to wait at least 10 minutes after removing the service plug grip to fully discharge the high voltage capacitor inside the hybrid motor control inverter assembly.
- Keep the removed service plug grip in your pocket to prevent other technicians from accidentally installing it while you are servicing the vehicle



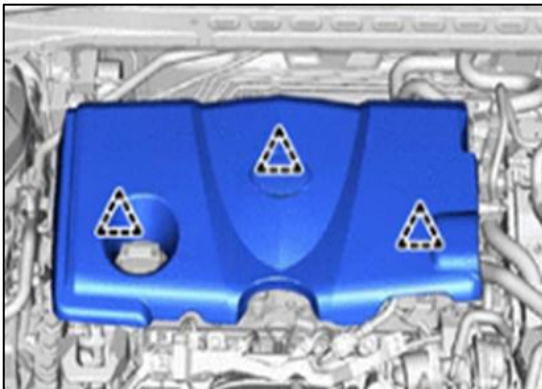
- b) While wearing insulated gloves, rotate the handle of the service plug grip and remove the service plug grip as indicated by the arrows, in the order shown in the illustration.



2. OPEN THE HOOD
3. REMOVE RADIATOR COVER (5 CLIPS)



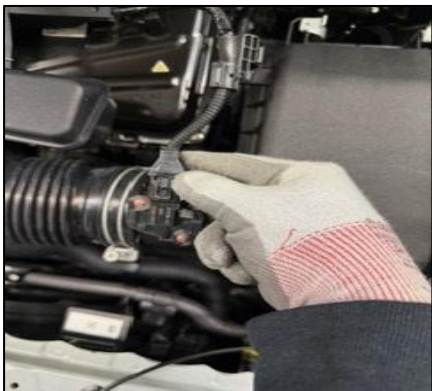
4. REMOVE AIR INLET
- a) (2) 10mm bolts



5. REMOVE V-BANK COVER
- a) Pull straight up to release $n=3$ attachment points



6. REMOVE HOSE
- a) At Air Inlet Tube, loosen Clamp to Valve Cover



7. UNCLIP HARNESS CONNECTION AND WIRE HARNESS (W/H) FROM MASS AIR FLOW SENSOR

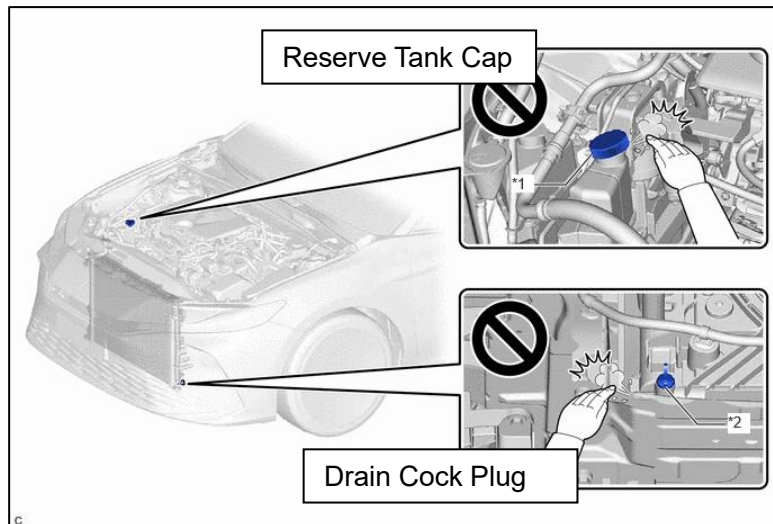


8. LOOSEN HOSE CLAMP (10MM BOLT) WHERE THE INTAKE MEETS THE THROTTLEBODY.

9. REMOVE THE AIRBOX AND TUBE ASSY



10. DRAIN INVERTER COOLANT

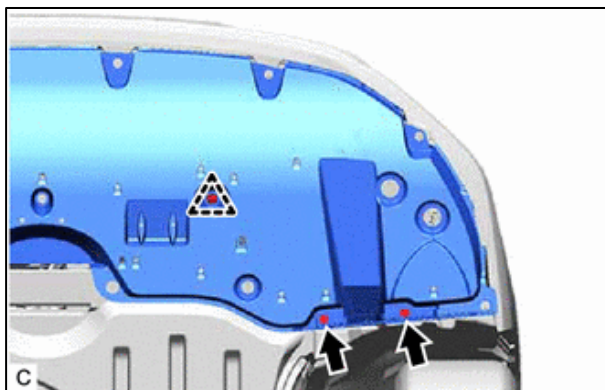


CAUTION:

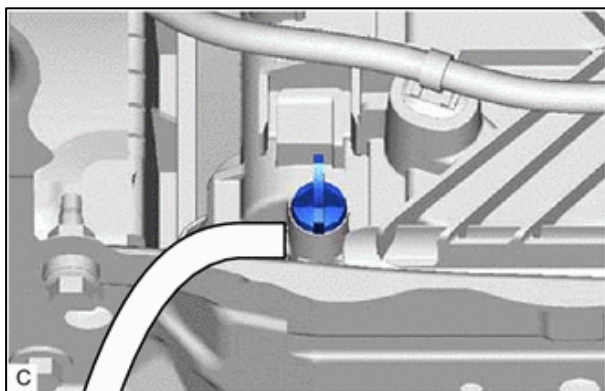
To avoid the danger of being burned, do not remove the reserve tank cap while the coolant (for inverter) is still hot. Pressurized, hot coolant (for inverter) and steam may be released and cause serious burns.

NOTICE:

- Do not reuse the drained coolant because it may contain foreign matter.
- Collect the drained coolant and measure its volume to establish a benchmark. When adding coolant, make sure to add more coolant than the measured amount.



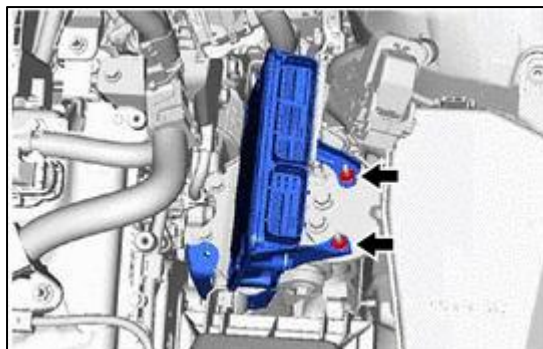
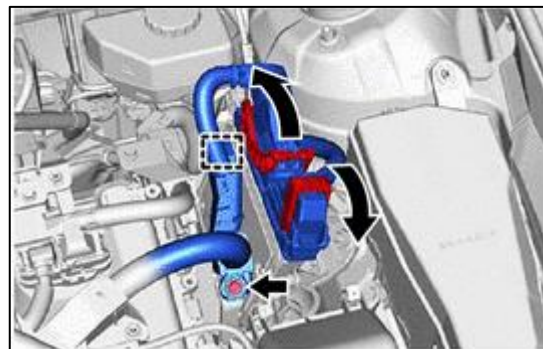
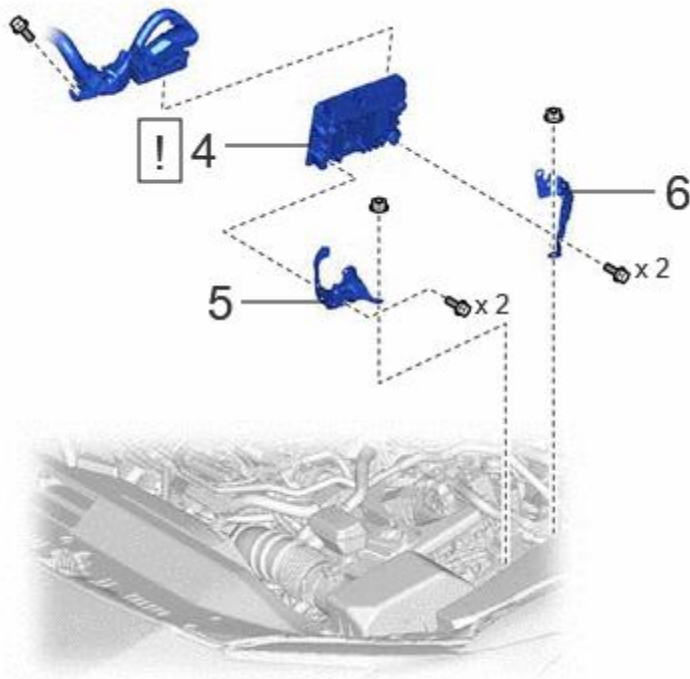
- Remove the reserve tank cap from the inverter reserve tank assembly.
- Remove the 2 screws and clip.
- Pull down the No. 1 engine under cover.



- Connect a hose with an inside diameter of 9 mm (0.354 in.) to the drain cock as shown in the illustration.
- Loosen the drain cock plug indicated in the illustration and drain the coolant.

11. REMOVE THE ECM

(4)	ECM
(5)	NO. 1 ECM BRACKET
(6)	NO. 2 ECM BRACKET



- a) Rotate the 2 levers while pushing the locks, and disconnect the 2 ECM connectors.

NOTICE:

After disconnecting the ECM connectors, make sure that dirt, water and other foreign matter does not contact the connecting parts of the ECM connectors.

- b) Remove the bolt and disengage the clamp to separate the engine wire.
c) Remove the 2 nuts and ECM.

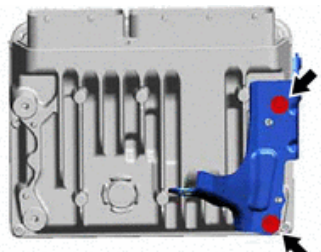
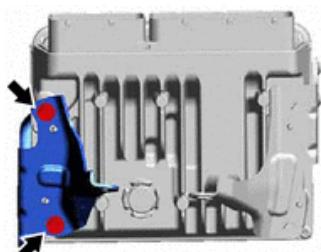
NOTICE:

Use care when handling the ECM. If the ECM has been struck or dropped during this procedure, it will need to be replaced. (Replacement of ECM is not covered under this recall.)



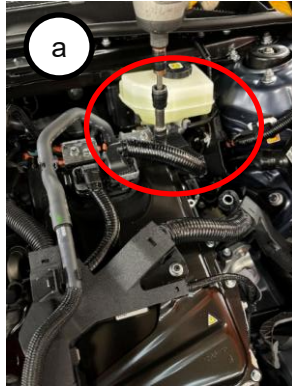
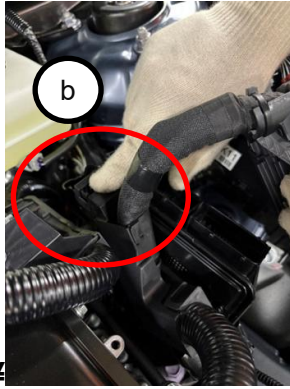
ECM Bracket No. 1

ECM Bracket No. 2



- d) Remove (4) 10mm bolts (arrows)
e) Be careful not to damage pins
f) Use masking tape to cover the connections to avoid damage to pins.

12. FREE INVERTER HARNESS FROM BRACKET

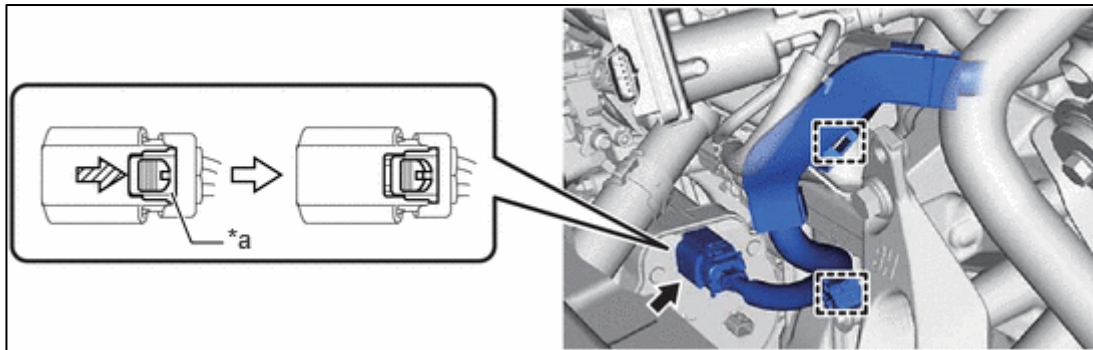


- b) Remove 10mm bolt from wire harness protector to inverter
- c) Unclip the wire harness.

13. DISCONNECT HV AIR CONDITIONING WIRE

*a	Green-Colored Lock
	Slide

- a) Disconnect the connector and slide the green-colored lock as shown in the illustration to securely lock it.
- b) Engage the (2) clamps.



14. CONTINUE REMOVING INVERTER

CAUTION:

Be sure to wear insulated gloves.



NOTICE:

Do not damage the terminals, connector housing or hybrid motor control inverter assembly during disconnection.

Insulate the disconnected terminals with insulating tape.



- d) Move the lock lever while pushing the lock on the connector, and disconnect the hybrid motor control inverter assembly connector.
- b) Remove connector (of same Harness) from top of Inverter

CONTINUE REMOVING INVERTER (continued)

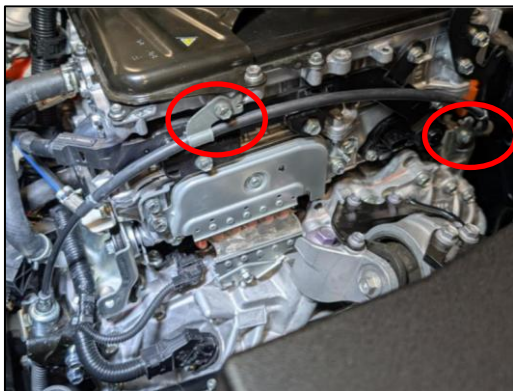


a) Remove Wire Harness (W/H) connection



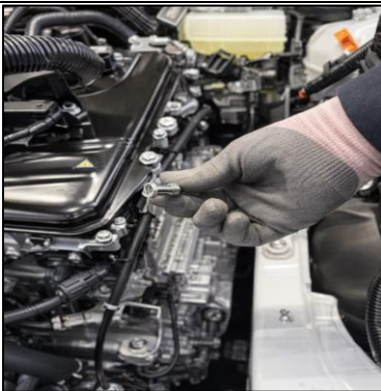
b) Remove the inverter bracket

c) (4) – 10mm bolts



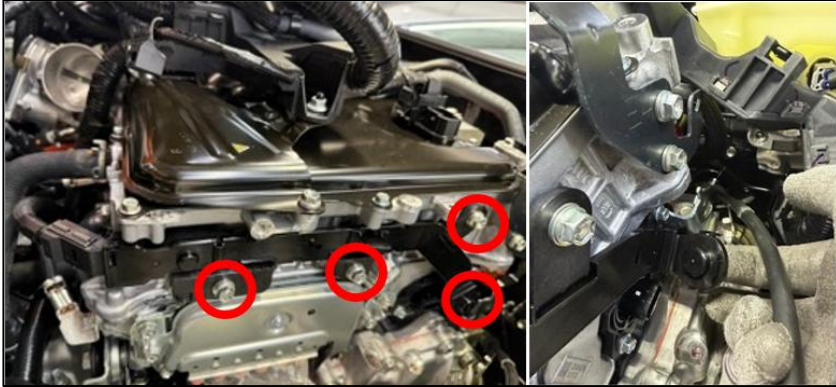
d) Remove transaxle cable from side of Inverter

e) Remove (2) - 10mm bolts

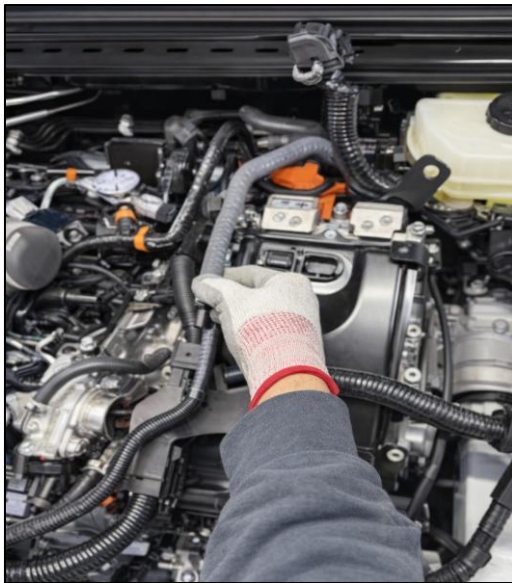


f) Pull cable down out of black bracket in middle of Inverter

CONTINUE REMOVING INVERTER (continued)



- g) Remove (3) – 10mm and 12mm nut (covered)
- h) Place AMD Cable in a safe location out of the way.



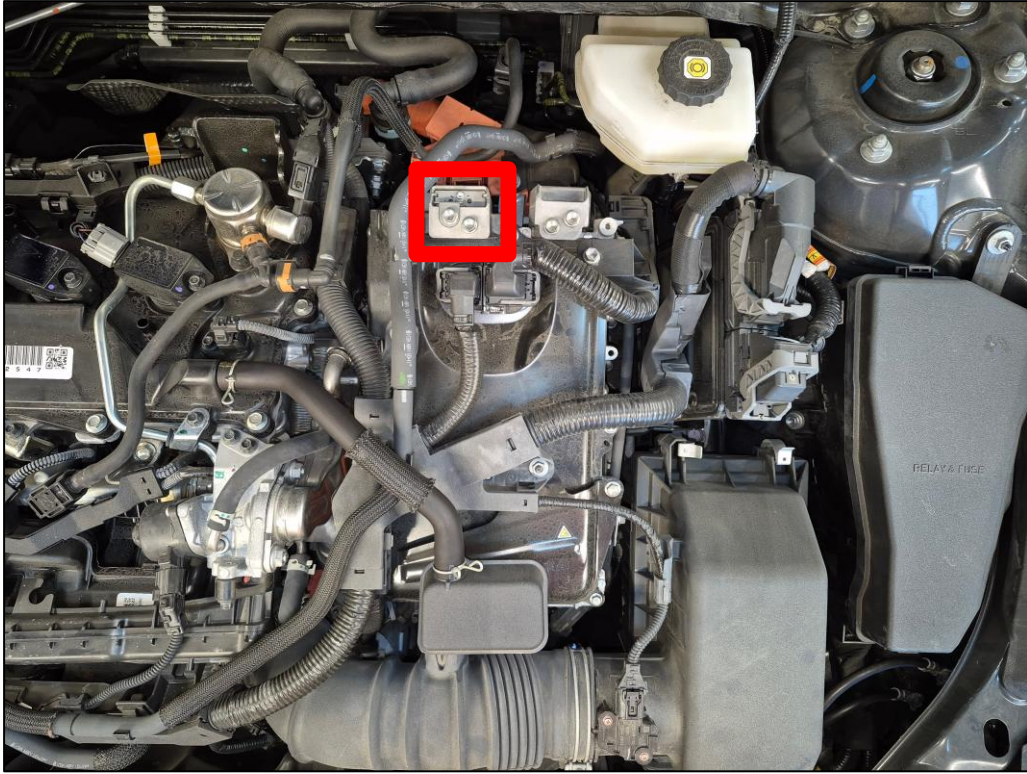
- i) Remove EVAP Hose at top of Inverter (pulls off)



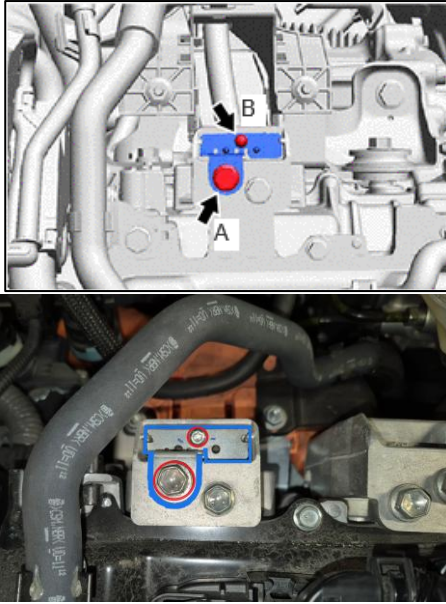
Ensure that a minimum of 10 minutes has passed since step 2 (DISCONNECT THE SERVICE PLUG GRIP) for complete discharge of the High Voltage Capacitor inside the Inverter.

15. CONFIRM TERMINAL VOLTAGE is ZERO

CAUTION: Be sure to wear insulated gloves



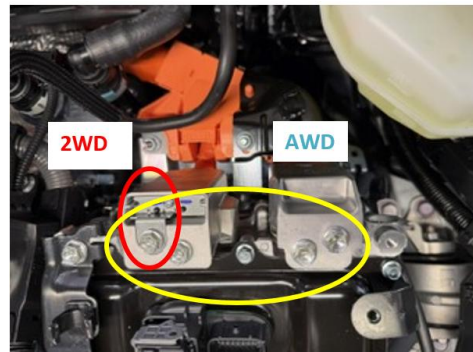
CONFIRM TERMINAL VOLTAGE is ZERO (continued)



- a) Remove the bolt (A).
- b) Using a T20 "TORX" socket wrench, remove the bolt (B) and connector cover assembly from the hybrid motor control inverter assembly.

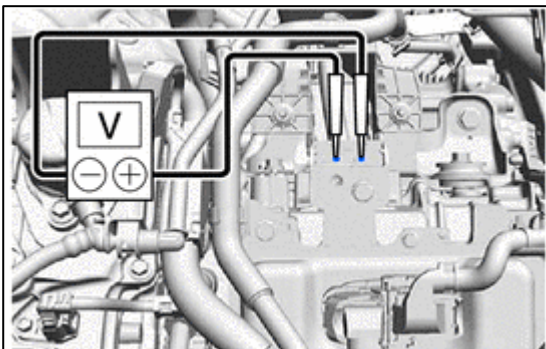
Note:

AWD has 4 bolts & 2 nuts
2WD has 2 bolts & 2 nuts



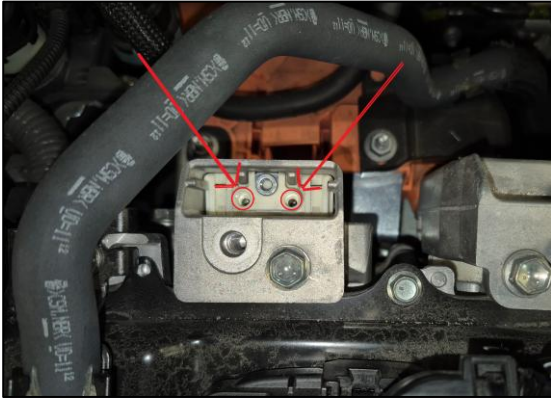
NOTICE:

- Do not touch the connector cover assembly waterproof seal.
- Do not allow any foreign matter or water to enter the hybrid motor control inverter assembly.



- c) Using a voltmeter, measure the voltage between the terminals of the 2 phase connectors.

CONFIRM TERMINAL VOLTAGE is ZERO (continued)



Standard Voltage: 0 V

If voltage is greater than one volt, confirm previous steps and test again.

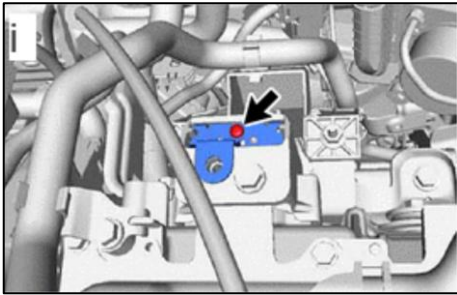
NOTICE:

Do not allow any foreign matter or water to enter the hybrid motor control inverter assembly.

HINT:

- d) Use a measuring range of DC 750 V or more on the voltmeter.

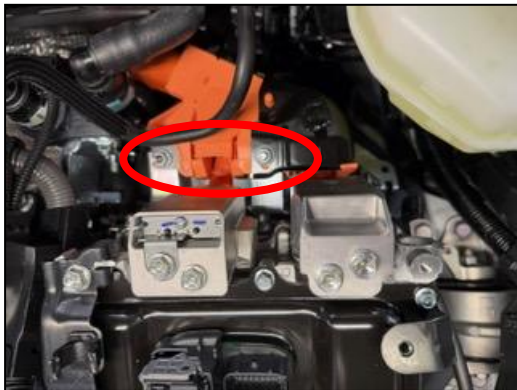
16. RETURN THE COVER



- a) Temporarily install connector cover assembly.
- b) Using a T20 'TORX' socket wrench, install bolt B and the connector cover assembly to the hybrid motor control inverter assembly.

Torque = 2.0 Nm

17. REMOVE ENGINE WIRE HARNESS AT INVERTER



- a) Remove 2 - 10mm nuts
- b) Remove 2 nuts on back side (all)
- c) Grab back of MG Cable, pull off of studs, and push 2 MG Gables out of Inverter
- d) AWD has 4 bolts & 2 nuts
- e) 2WD has 2 bolts & 2 nuts

18.UNCLIP ENGINE WIRE from INVERTER



19.DISCONNECT HEV INVERTER CONNECTIONS



- a) Disconnect connections
- 2WD has $n=1$
 - AWD has $n=2$

20.DISCONNECT ENGINE WIRE CONNECTIONS



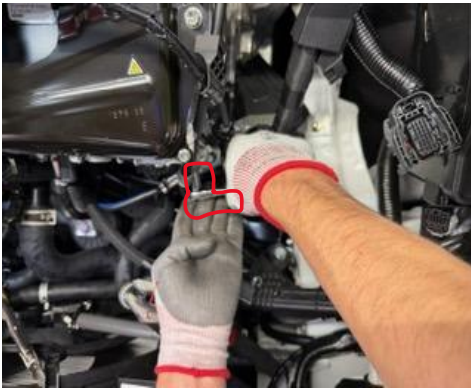
- a) Remove (2) – 10mm nuts

21.DISCONNECT SECOND TOP INVERTER CONNECTOR



a) Passenger side top inverter connector

22.REMOVE GROUND WIRES FROM FRONT OF INVERTER



a) Remove (2) - 10mm bolts

23. REMOVE TWO COOLENT HOSES



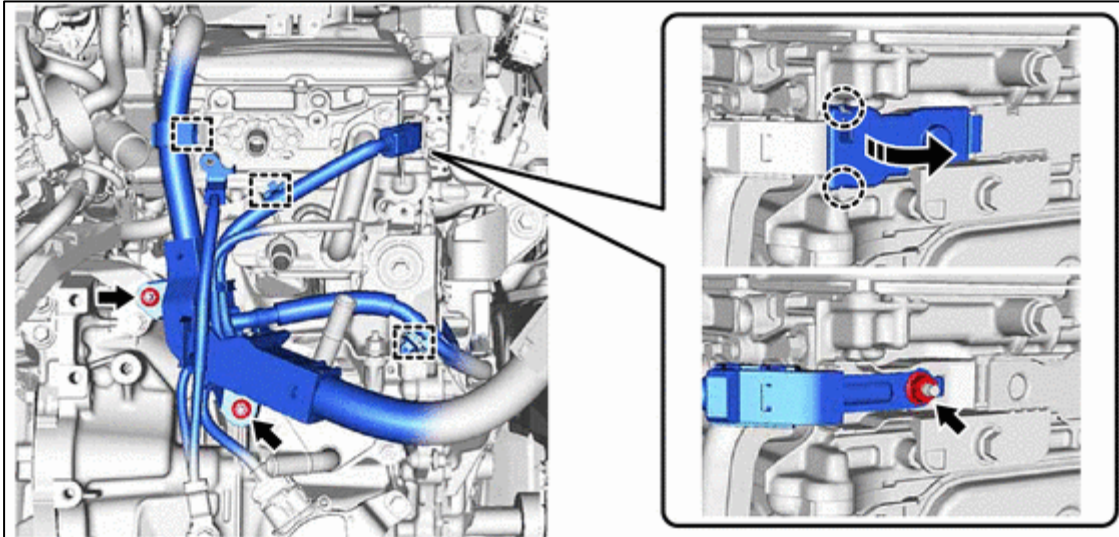
- Pull n=2 Hose Clamps from Inverter back onto Hoses to remove n=2 hoses
- Use rags to collect excess coolant.
- Cover the open pipe with PN 90339-16002 or similar cover .

CAUTION:

- PIPE ON INVERTER IS EASILY DAMAGED FROM TOOL. USE GREAT CARE WHEN REMOVING THE HOSE TO PREVENT DAMAGE TO THE PIPE.
- DO NOT USE ANY SHARP TOOLS TO REMOVE THE HOSES.
- IF DAMAGED DURNING REMOVEAL, WARRANTY WILL NOT COVER A REPLACEMENT PART.



24. REMOVE WIRE HARNESS FROM CLAMP



25. REMOVE WATER BYPASS INLET



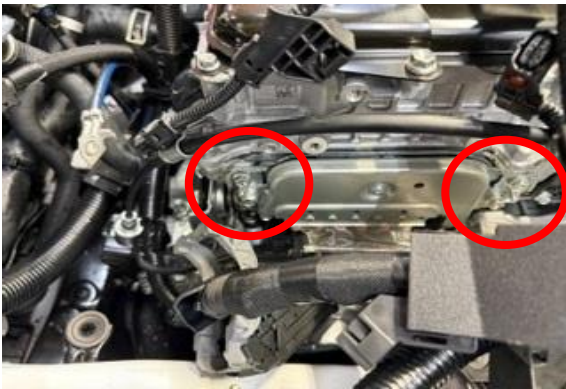
a) Remove (1) – 12mm bolt

26. REMOVE ENGINE WIRE HARNESS (W/H) TO TRANSAXLE



- a) Remove (1) – 10mm nut using a deep well socket or extension

27. REMOVE INVERTER COVER TO INVERTER



- a) Remove (3) – 10mm bolts



- b) Pull Inverter cover straight out

*** BE CAREFULL NOT TO TEAR WIRE MESH**



28. REMOVE HIGH VOLTAGE CONNECTIONS AND GENTLY LAY HARNESS ASIDE

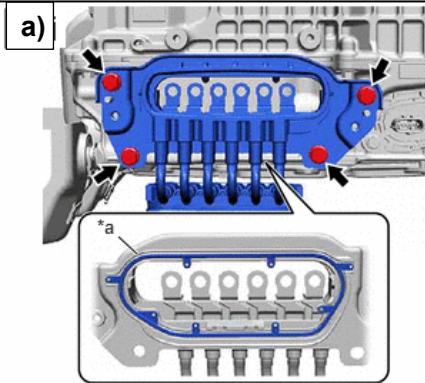
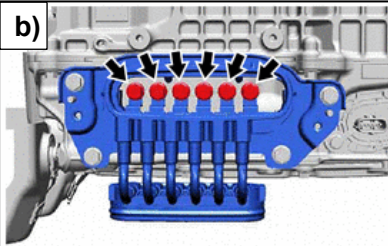


a) Remove (4) – 10mm external bolts

b) Remove (6) – 10mm internal bolts using a deep well socket

*a – Waterproof seal

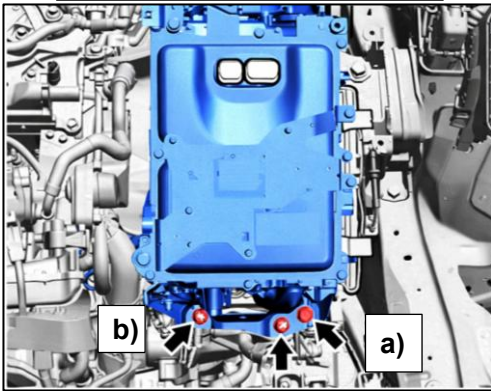
USE HAND TOOLS ONLY



29.FRONT OF INVERTER - REMOVE BRACKET TO TRANSAXLE



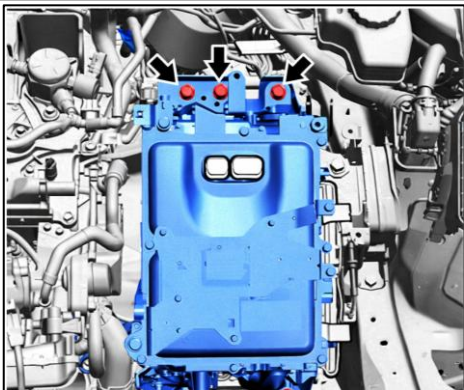
- a) Remove (2) – 14mm nuts
- b) Remove (1) – 14mm bolt



30.REAR OF INVERTER - REMOVE BRACKET TO TRANSAXLE



- a) Remove (3) - 14mm bolts



31.REMOVE HIGH VOLTAGE AC WIRE



- a) Hold Engine Wire up and out of way
- b) Remove (1) Wire Harness (W/H) Clip
- c) Tilt Inverter to Drivers Side to remove bolts
- d) Remove (3) - 10mm bolts
- e) Pull wire straight out
- f) Lift inverter and remove from the vehicle

Remove Clips, bolts, then Connector in that order

IX. INVERTER SUB-ASSEMBLY PREP FOR DISASSEMBLY

[↶ Return to Table of Contents](#)

1. PREPARATION BEFORE DISASSEMBLY

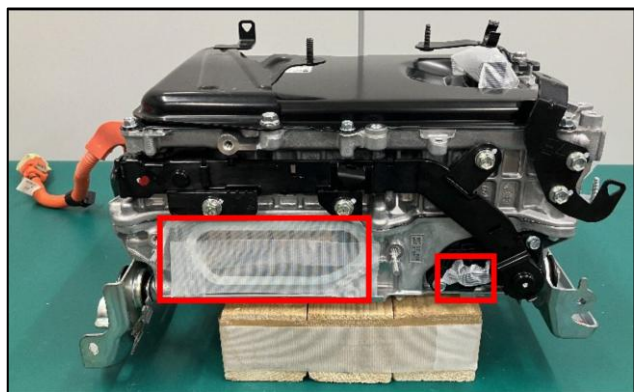
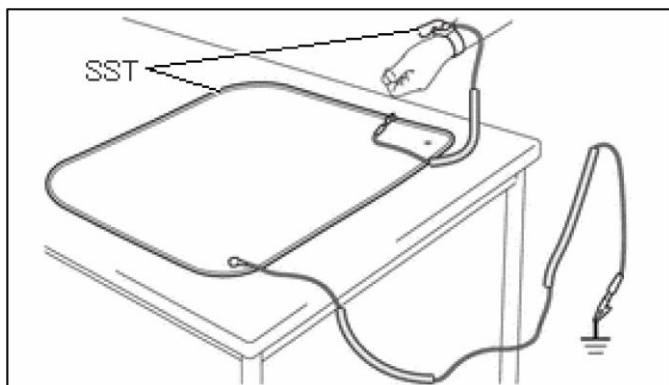
NOTICE:

Electrostatic discharge required. Damage to or destruction of electrical components. Only touch the housings of electrical components. Do not touch pins or multi-pin connectors directly.

Click [HERE](#) for additional information.

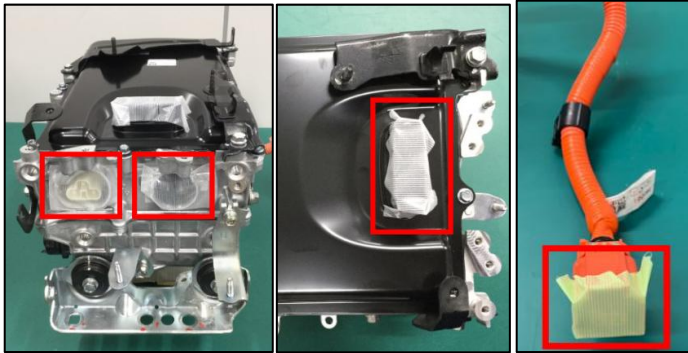
CAUTION:

- Wear insulating gloves until zero voltage confirmation is complete.
- When disassembling and assembling the inverter ASSY, care must be taken to prevent static electricity.
- Do not touch internal components during work.
- Do not let clothes touch electronic components during work. Do not let clothes touch electronic components.
- Converter and Inverter Case SUB-ASSY must be placed on SST. (anti-static mat).
- Use HAND TOOLS ONLY



- a) Attach the SST (wrist band) to the wrist.
- b) Secure the ground clip of the SST (antistatic mat) to the ground point of the workplace or workbench (anchor bolt).
- c) If the ground clip is not accessible, extend the wiring.
- d) Secure the SST (wrist band) ground clip to the specified location on the SST (anti-static mat).
- e) In order to prevent static electricity and to prevent dust and foreign matter from entering the inverter ASSY, when working inside the inverter ASSY, wear antistatic gloves.
- f) Mask every opening on inverter, including wire harness connections with masking tape.

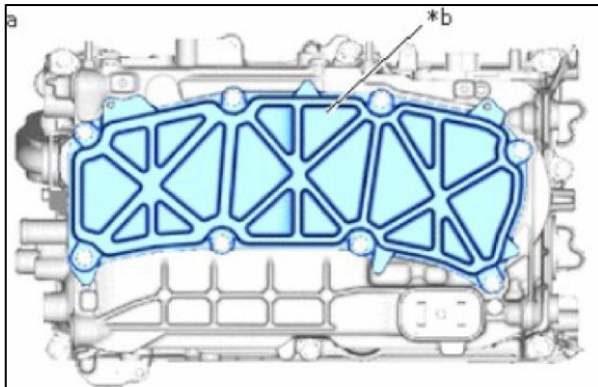
PREPARATION BEFORE DISASSEMBLY (continued)



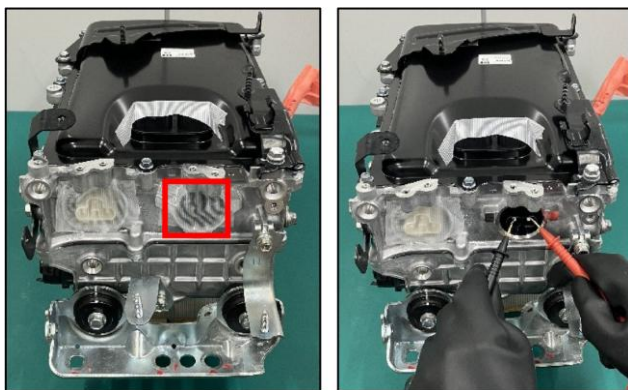
- g) If an opening appears during subsequent work, cover with masking tape, etc., to prevent foreign matter and water droplets from entering.
- h) Each time, cover with masking tape, etc.



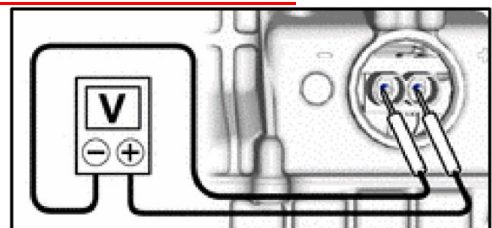
- i) Set the inverter ASSY on a piece of clean wood to support it during the next few steps. Once the inverter brackets are removed, the inverter must be placed on the anti-static mat SST.



- j) Place the inverter ASSY so that it is supported on the *b surface in blue. Setting the inverter on other surfaces can damage it.



- k) Setting the multimeter range to 750VDC or more, Verify zero voltage.
- l) If voltage is greater than 1 VOLT, the inverter ASSY should not be used and must be **REPLACED WITH NEW.**

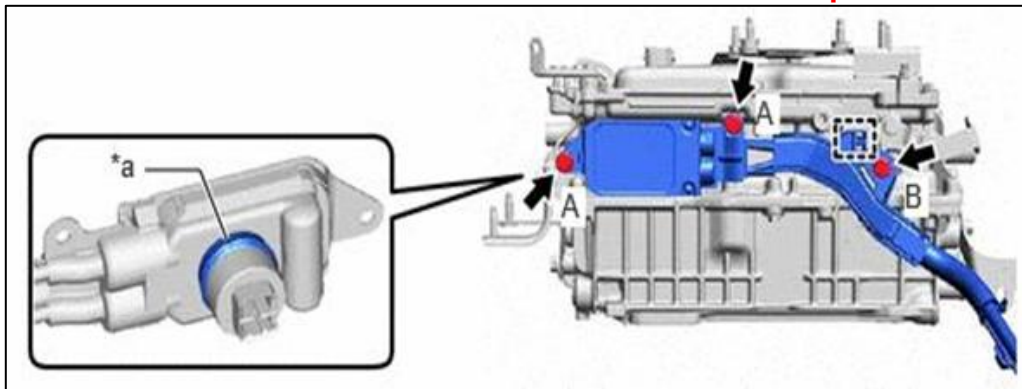


- m) This operation confirms there is no high voltage, and insulating gloves can then be removed.

2. HV AIR CONDITION WIRE REMOVAL

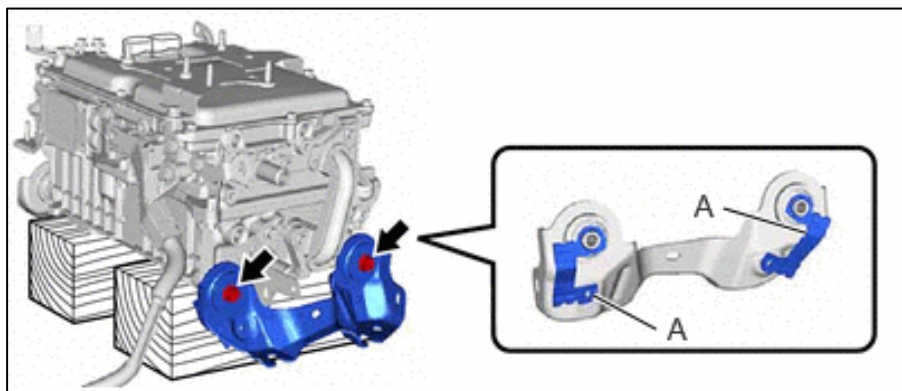
CAUTION:

- Do not touch the sealing surface of the inverter ASSY.
- Do not touch the waterproof seal or terminals of the HV air conditioner wire.
- Be careful not to damage the terminal parts. Wrap masking tape around the terminals to protect them.
- Converter and Inverter Case SUB-ASSY must be placed on SST. (anti-static mat).



- Remove the HV air conditioner wire from the inverter ASSY
- Mask the ends of the cable to prevent contamination or damage.

3. REMOVE NO. 1 INVERTER BRACKET

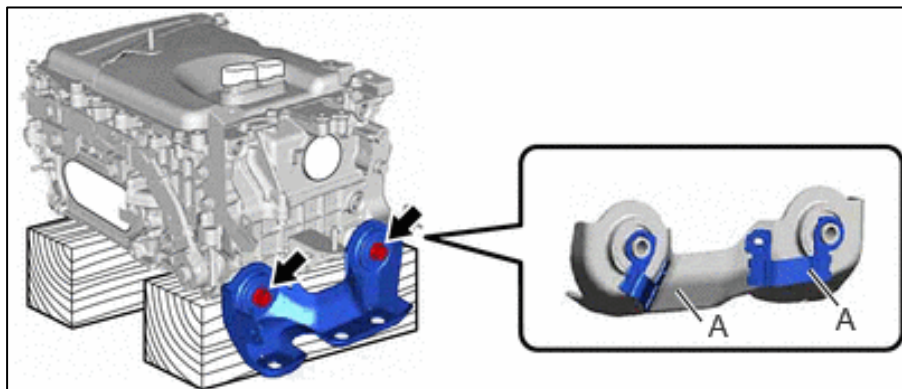


- Remove the (2) – 12mm bolts and No. 1 inverter bracket from the hybrid motor control inverter assembly

NOTICE:

Do not touch portion (A) of the No. 1 inverter bracket

4. REMOVE NO. 2 INVERTER BRACKET

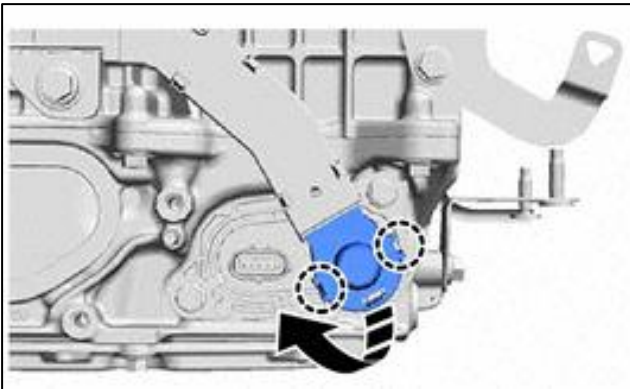


- Remove the (2) – 12mm bolts and No. 2 inverter bracket from the hybrid motor control inverter assembly

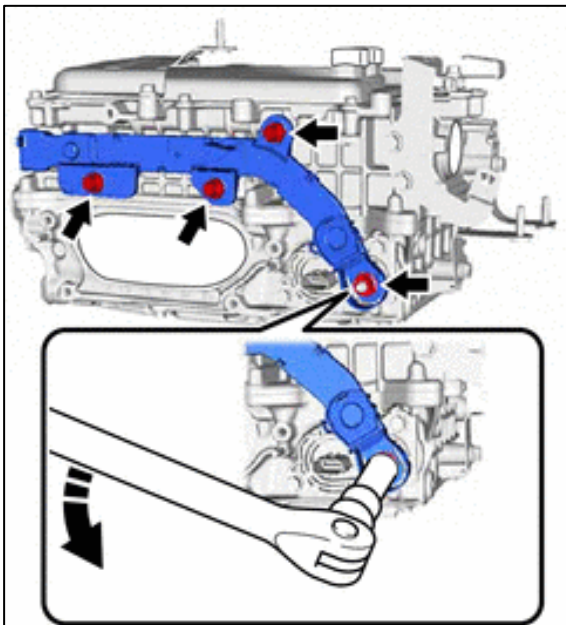
NOTICE:

Do not touch portion (A) of the No. 2 inverter bracket

5. INVERTER BUS BAR PLATE SUB-ASSY REMOVAL



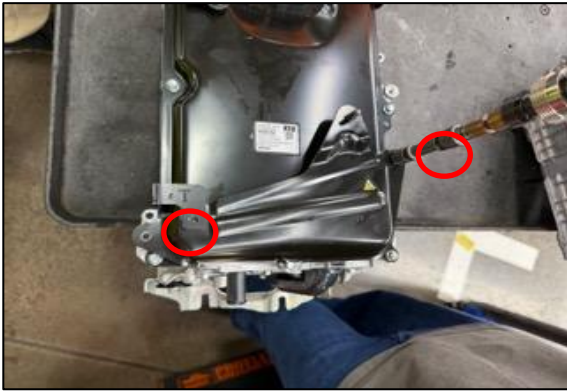
a) Unhook the claws and turn the cover.



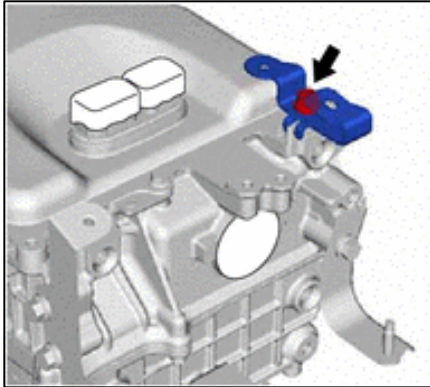
b) Remove the (3) – 10mm bolts, nuts and clamps.

c) Remove the bus bar plate SUB-ASSY from the inverter ASSY

6. PREPARATION BEFORE DISASSEMBLY

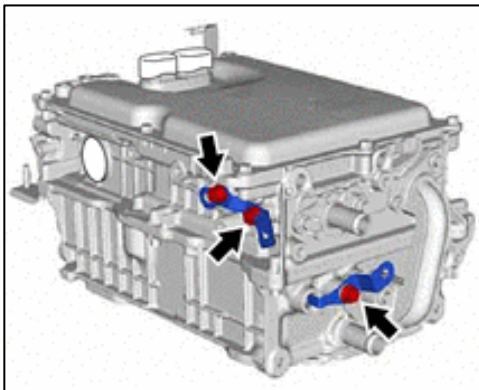


- a) Remove top front Wire Harness (W/H) Bracket/Protector, (2) – 10mm bolts

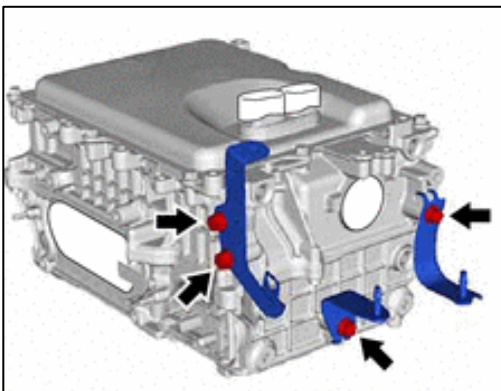


- d) Top Pass Side remove Wire Harness (W/H) Bracket

- c) (1) – 10mm bolt



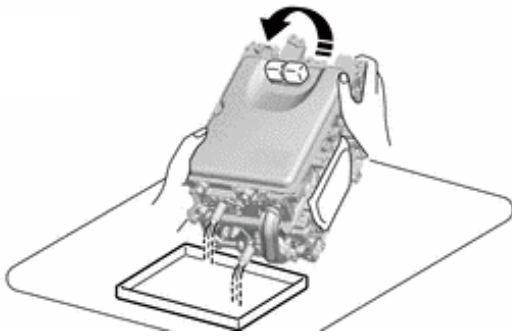
- d) Remove (3) - 10mm bolts



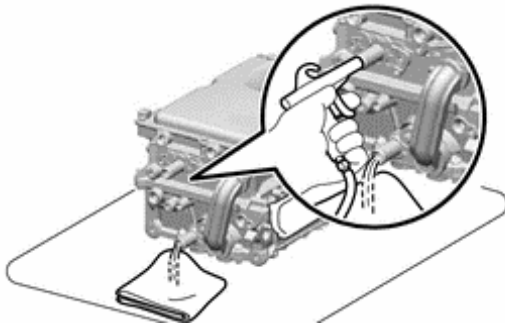
- e) Dr Side rear Inverter - remove Wire Harness (W/H) Bracket

- f) Remove (4) – 10mm bolts

7. DRAIN THE COOLANT FROM THE INVERTER



- a) Remove two rubber plugs from the cooling pipe.
- b) Tilt the inverter ASSY and drain the remaining coolant.
- c) Drain the coolant.

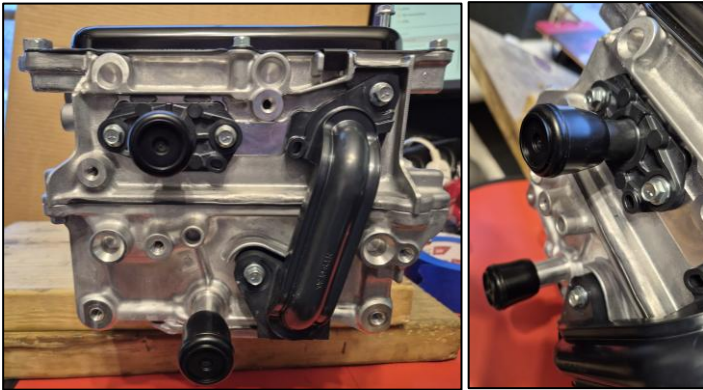


- d) Tilt the inverter ASSY (converter switch).
- e) Air blow until no water drops come out.
- f) Attach two rubber stoppers to the cooling pipe (black).
- g) Secure the ground clip of the SST (wrist band) to the inverter ASSY.

CAUTION

- Air is blown from the resin cooling pipe
 - **USE LOW AIR PRESSURE TO PREVENT COOLENT SPARY**
 - **BE SURE TO WEAR EYE PROTECTION**

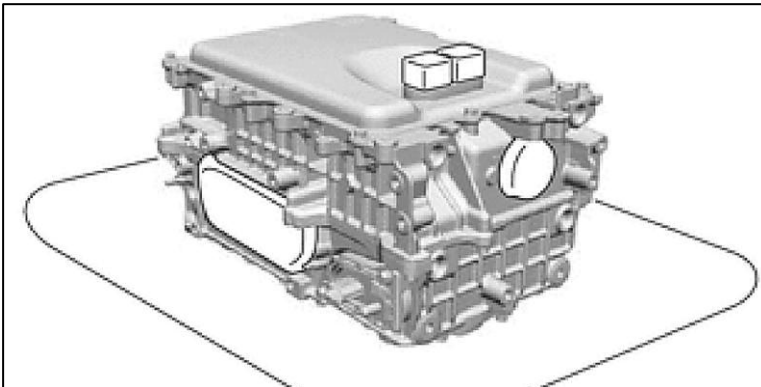
8. INSTALL RUBBER CAPS



- a) Ensure the rubber caps are installed securely.

SST - 90339-16002 – If not available, a rubber stopper can be purchased from a local hardware store.

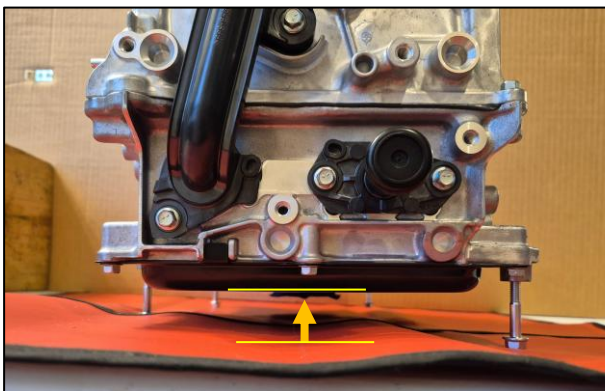
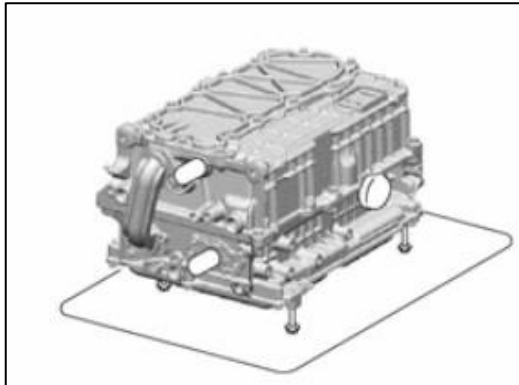
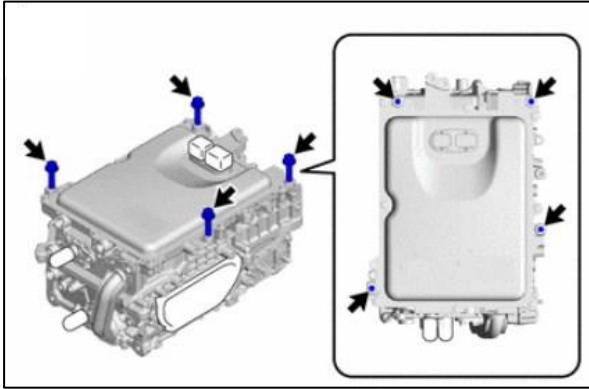
9. CLEANING



Use the Desktop Anti-Static Mat Set

- a) Use a clean cloth to remove dirt and dust on the inverter ASSY surfaces and around the bolts.

10. INSTALL JIG BOLTS



a) Place the inverter ASSY in the position shown in the figure.

b) HAND install four bolts an equal amount such that it sits level.

(Stang jig Hex Bolt, flange, M6x1.0x50mm)

Bolt- 91551-80650

*If PN is not available, similar bolt can be purchased at local hardware store.

c) Turn the inverter ASSY upside down.

d) Adjust so that the inverter ASSY is horizontal.

CAUTION:

DO NOT SHOCK/IMPACT THE INVERTER ASSY

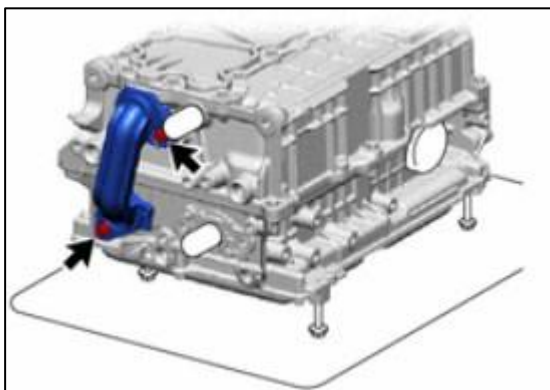
e) The purpose of the bolts is to prevent damage/contamination of the connector

f) Ensure there is a gap of approximately 15mm between the table surface and the inverter connector.

X. INVERTER SUB-ASSEMBLY DISASSEMBLY

[↩ Return to Table of Contents](#)

1. REMOVING THE INVERTER COOLING PIPE



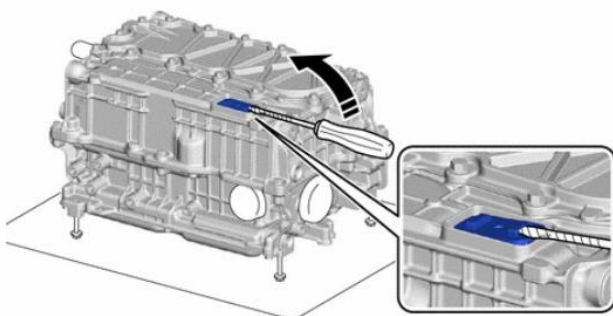
- Remove the two bolts securing the inverter cooling pipe clamp.
- Remove the inverter cooling pipe clamp.
- Thoroughly wipe off any cooling liquid adhering to the removed components.

NOTE: Dry any remaining coolant that leaks from the cooling pipe.



- Mask the two openings with tape

2. REMOVE THE INVERTER DRAIN PLUG



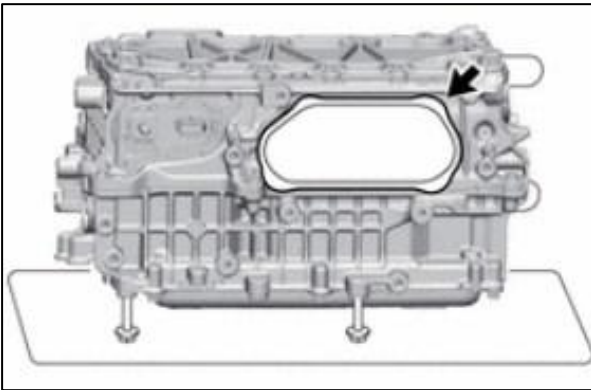
- Using a flat-blade screwdriver with protective tape wrapped around the tip, remove the inverter drain plug from the inverter ASSY.
- After removing the inverter drain plug, sealant remaining inside the inverter ASSY **must not be removed at this time.**



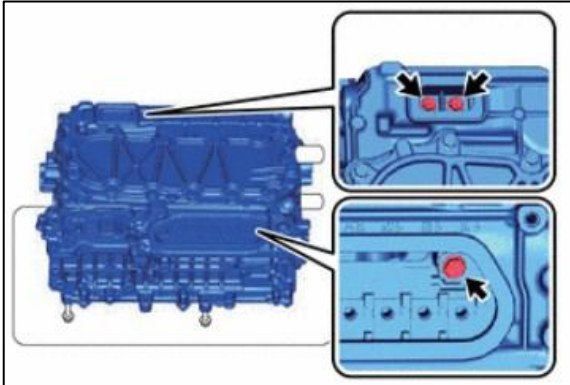
CAUTION:

- Do not damage the inverter ASSY mounting surface or internal components.
- After removal, residual sealant inside the inverter ASSY will be visible.
- Residual sealant will be removed in a later step.
- USE HAND TOOLS ONLY

3. CONVERTER CASE SUB-ASSY REMOVAL (1/3)

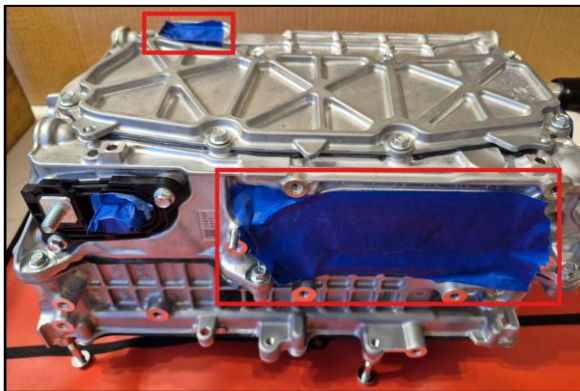


a) Remove the tape from the opening.



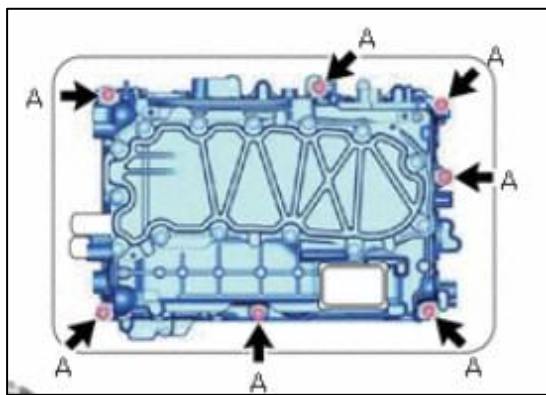
b) Remove the three bolts by hand

Notice: All electrical connection fasteners should be removed by hand.

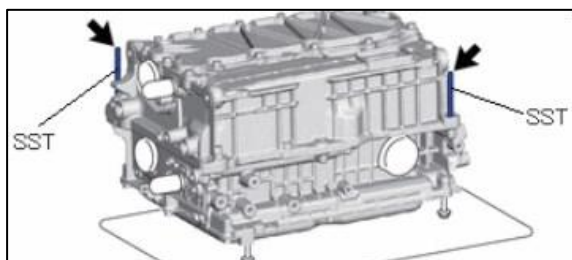


c) Use tape or the like to mask the two openings after removing bolts.

4. REMOVE CONVERTER CASE SUB-ASSY (2/3)

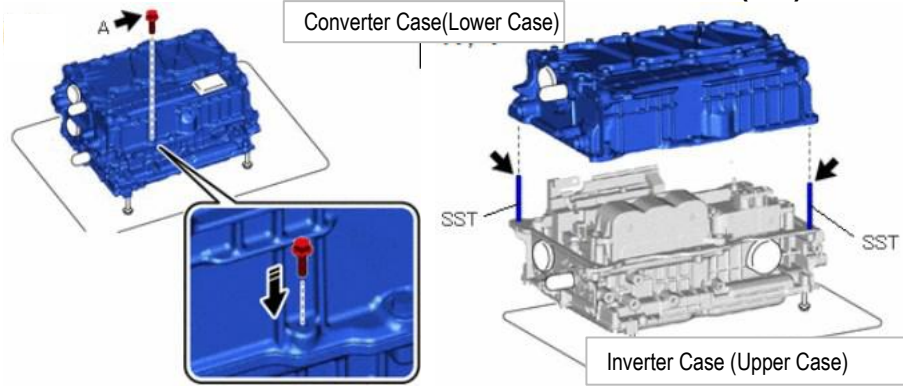


- a) Position the inverter ASSY as shown in the figure.
- b) Remove and DISCARD the seven bolts (A).



- c) Install the SST (09891-28010) **HEV INVERTER GUIDE PINS**.
- d) Tighten the SST by **hand only**.

5. REMOVE CONVERTER CASE SUB-ASSY (3/3)

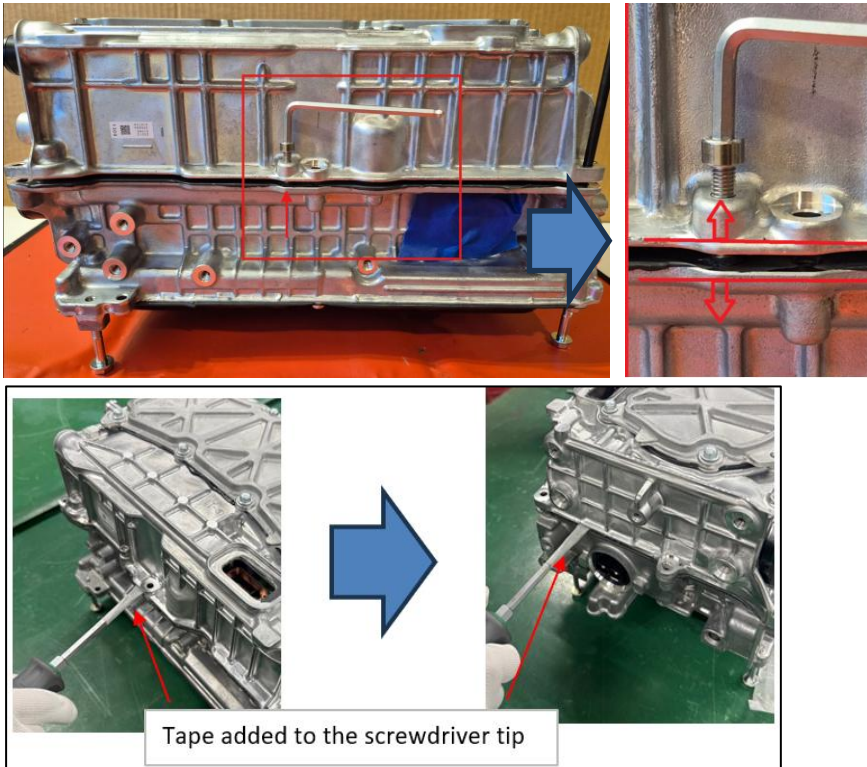


a) Temporarily install the socket head cap screw (A) at the position shown, and slowly tighten it against the base in order to separate the two halves.

b) Wrap protective tape around the end of flat blade screwdriver.

c) Alternate tightening and loosening the socket head cap screw gently to separate the two halves.

d) Insert a screwdriver (with tape over the end to protect the mating surfaces) into the gap near the bolt, and remove the case by raising it little by little.
e) While guiding along the SST pins, remove the converter case vertically from the inverter case.



CAUTION:

- Overtightening bolt (A) may damage the inverter ASSY.
- Do not insert the flat-blade (slotted) screwdriver excessively. Doing so may damage internal components.
- Do not contact or interfere with internal components when removing the converter case SUB-ASSY.
- When removing the converter case SUB-ASSY, do not allow coolant to drip into the inverter case SUB-ASSY.
- Do not allow foreign matter to enter the converter case SUB-ASSY.
- Do not allow foreign matter to adhere to the seal surface.
- Temporarily store the converter case SUB-ASSY in a clean location, face down on a clean sheet of paper.

6. PROTECT CONVERTER CASE FROM CONTAMINATION



- a) Place the converter cover (lower case) aside sealing surface down in a clean area to prevent contamination.

7. INSTALL PROVIDED COVER



- a) FF Inverter Cover



- b) AWD Inverter Cover

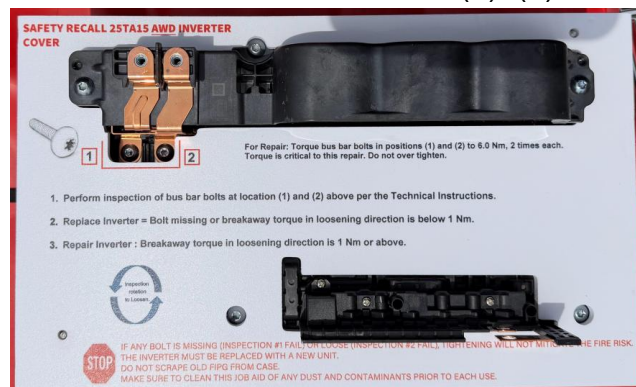
XI. INSPECTION OF SUSPECT LOOSE BUS BAR BOLTS

[↪ Return to Table of Contents](#)

Inverter Bolt



Location of inverter bolts (1), (2)



IMPORTANT:

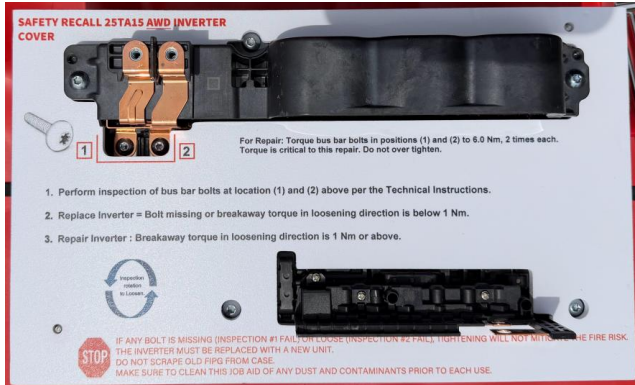
The torque test is performed to verify the as-found torque (current tightness) when the vehicle arrives. It is not intended to set or adjust torque values.

If the bolt is tightened instead of measured, the inverter must be replaced as it is no longer possible to measure the as-found torque when the vehicle arrived.

CAUTION:

- KEEP COVER INSTALLED, DO NOT TOUCH INSIDE THE INVERTER
- TO PREVENT CONTAMINATION, MINIMIZE WORK ABOVE THE INVERTER CASE
- INSPECTIONS BELOW ARE CRITICAL FOR CUSTOMER SAFETY
- LOOSE BUS BAR BOLT CANNOT BE CORRECTED BY TIGHTENING AND MAY STILL PRESENT A FIRE RISK
- IF ANY BOLT IS MISSING OR FAILS INSPECTION, DO NOT TIGHTEN —> REPLACE THE INVERTER

**1. INSPECTION #1:
VERIFY BUS BAR BOLTS EXIST AT LOCATIONS shown (1 and 2).**



- a) Inspect the threaded locations shown and verify that bolts (1) and (2) are installed.
- b) If either bolt is not installed as shown (missing or loose in the case), replace the inverter assembly.

**2. INSPECTION #2:
NO COUNTERCLOCKWISE ROTATION WITH 1.0 NM APPLIED
The purpose of the torque test is to ascertain/verify what the current torque setting is, not to set a torque setting."**



**DO NOT SKIP INSPECTION OF THE BUS BAR BOLTS.
IF ANY BOLT IS MISSING (INSPECTION #1 FAIL) OR LOOSE (INSPECTION #2 FAIL), TIGHTENING WILL NOT MITIGATE THE FIRE RISK.
THE INVERTER MUST BE REPLACED WITH A NEW UNIT.
USE PROVIDED BEAM STYLE TORQUE WRENCH CST and COVER**

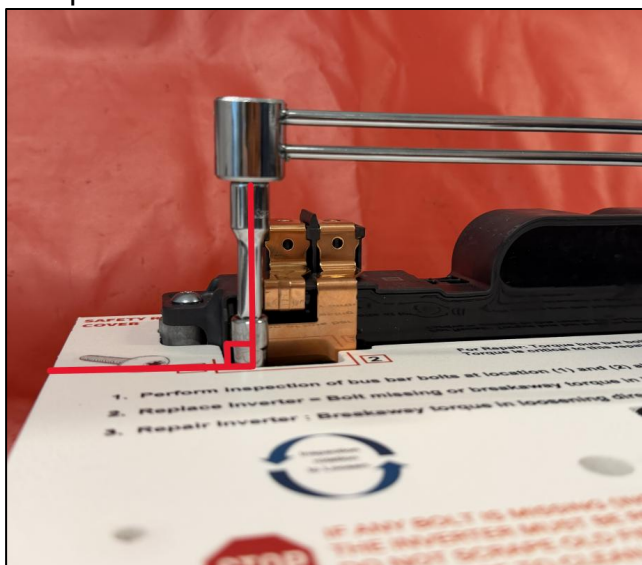


Use a 1.5 inch extension to reach the two bolts without contacting the vertical bus bar

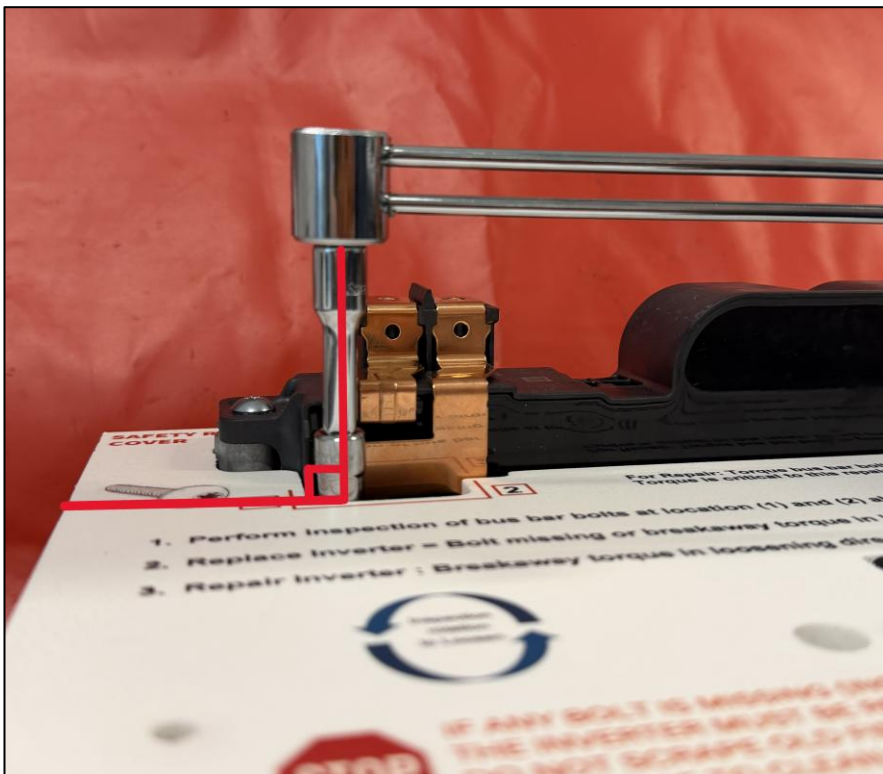
a) Inspect the torque wrench condition: the gauge must read zero when not in contact with part.



b) Set up the ¼ beam style torque wrench on the 1st bus bar bolt.



INSPECTION #2 (continued)



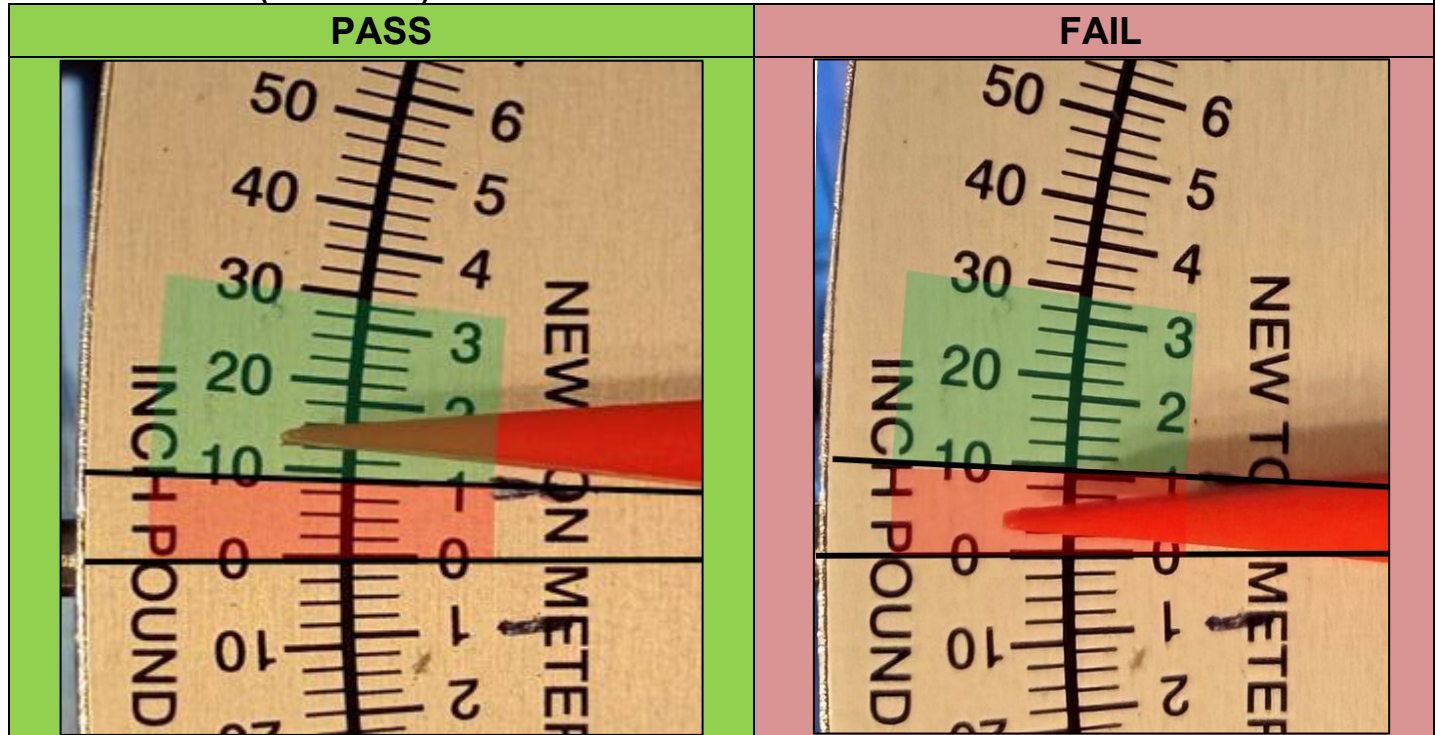
- Be very careful to keep the extension perpendicular to the sealing surface of the case. If the torque is applied at an angle, the inspection will not be accurate.
- DO NOT PAINT MARK BOLTS because this will introduce contamination into the inverter.

INSPECTION #2 (continued)



- c) While keeping a very close eye on the dial of the torque wrench, slowly, rotate the handle of the torque wrench counterclockwise, to loosen **until it breaks away.**
- d) As you rotate the torque wrench the arrow at the end of the beam will move to the right on the gauge.

INSPECTION #2 (continued)



- e) If the arrow moves past the 1 Nm mark, as show in the image at left, the inspection is a PASS, and the inverter is good. Proceed to Repair.
- f) If the arrow does not exceed the 1 Nm mark before the bolt rotates, the inverter is NO GOOD and must be replaced with a **NEW** one. Proceed to order a replacement inverter assembly.
- g) Repeat the inspection steps for the bolt at location 2.



-Watch this video for a detailed explanation. [Video.](#)

SAFETY RECALL 25TA15

Inverter inspection procedure

Inspection is critical.

If a bus bar bolt is loose when the vehicle arrives, tightening bolts does NOT eliminate the fire risk.

It is essential to inspect and confirm that no bolts are missing or loose per the specific inspection procedure.

If any bolt is found missing or fails, the inspection procedure:

- DO NOT install or tighten
- Replace the inverter

****This inspection video does not replace the written procedures included in the Technical Instructions.**

XII. INVERTER REPAIR FOR **PASS** INSPECTION JUDGEMENT INVERTER: (ONLY FOR INVERTERS that PASS INSPECTION #1 and #2.)

[↪ Return to Table of Contents](#)

1. TIGHTEN BUS BAR BOLTS (1) AND (2) TO 6.0 Nm.



- a) Use the same beam style torque wrench from the previous step and torque bolts (1) and (2)

Torque: 6.0 Nm.

- b) Re-apply torque a second time at same 2 locations.

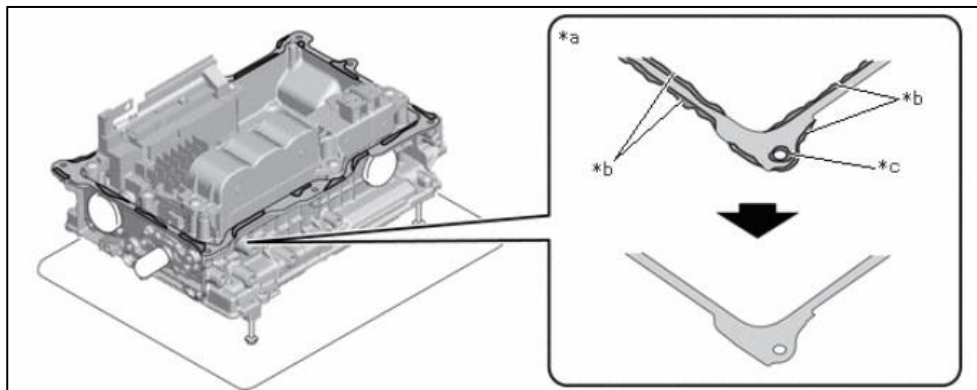
Torque: 6.0 Nm. (Torque is critical. Do not over torque these bolts)



DO NOT PAINT MARK BOLTS

2. FIPG REMOVAL (**Hand Peel only**)

FIPG removal must be done with caution and by hand, no debris from removal can enter the inverter. Take extreme caution when performing this step as directed.



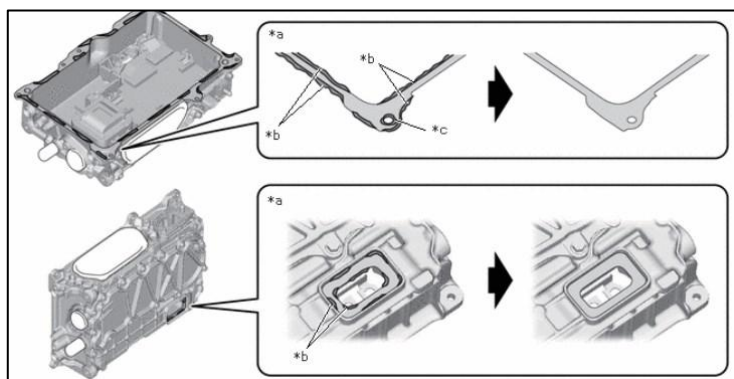
- a) *b-> Protruding FIPG
b) *c-> Raised FIPG
c) Only remove FIPG that is protruding or raised from the surface that is loose and can be grasped by your finger.
d) DO NOT scrape the surface with any tool.
e) Confirm that there is no foreign matter in the inverter and converter cases SUB-ASSY.

***If any contamination remains after tipping the inverter over in ones hands, the inverter must be replaced.**

Please watch this video for detail on **FIPG** removal and acceptable level of remaining FIPG.



3. FIPG REMOVAL (Converter case sub-assy)



- a) *b-> Protruding FIPG
- b) *c→ Raised FIPG
- c) Only remove FIPG that is protruding or raised from the surface that is loose and can be grasped by your finger. (Some remaining FIPG that cannot be removed is ok.)
- d) DO NOT scrape the surface with any tool.
- e) Confirm that there is no foreign matter in the inverter and converter cases SUB-ASSY.

***If any contamination remains after tipping the inverter over in ones hands, the inverter must be replaced.**

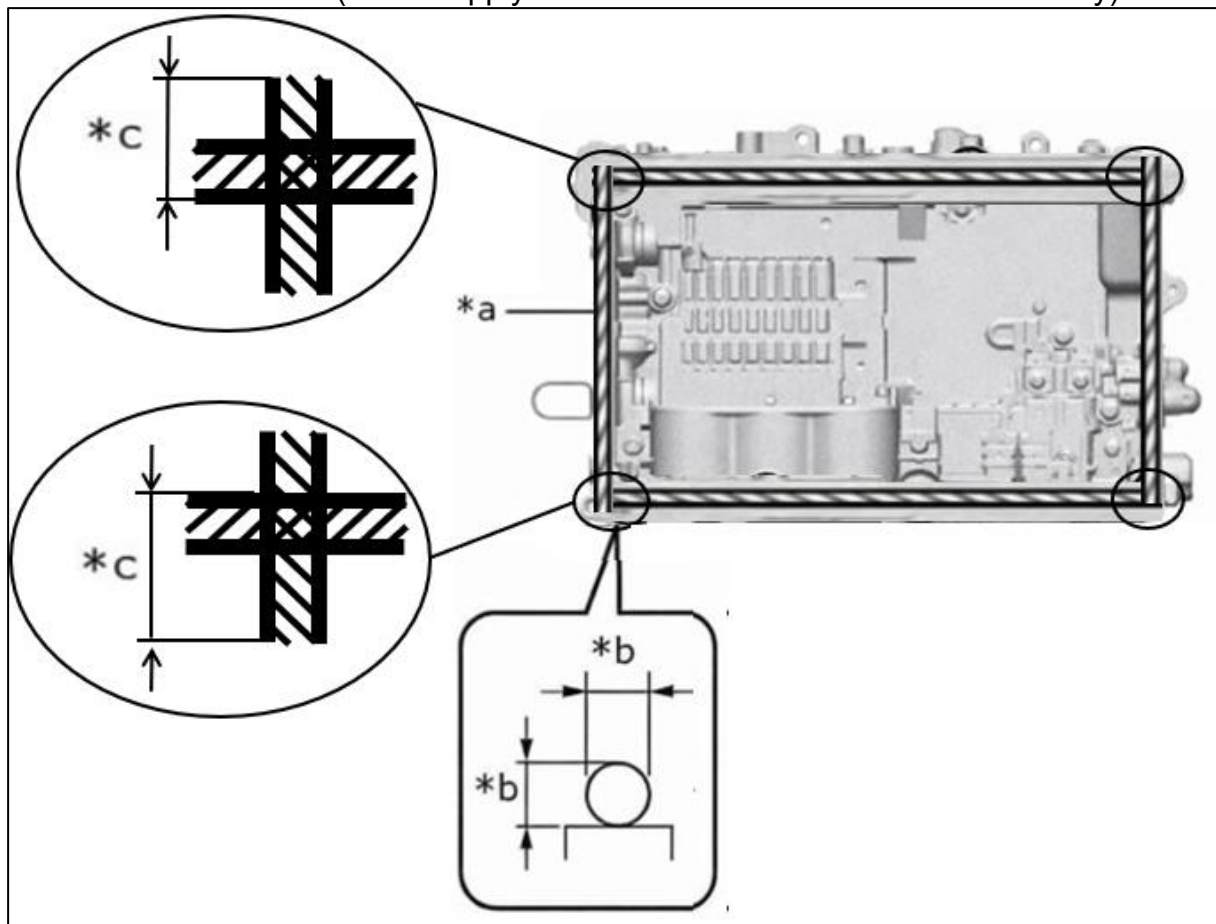
4. FIPG APPLICATION

CAUTION:

- DO NOT TOUCH INTERNAL PARTS
- MINIMIZE CONTACT WITH INVERTER SUB-ASSY SEALING SURFACE
- PREVENT OIL OR GREASE FROM CONTACTING SEALING SURFACE
- AVOID WORKING OVER THE TOP OF THE OPEN INVERTER SUB-ASSY AS MUCH AS POSSIBLE
- TO REDUCE THE RISK OF CONTAMINATION, THE FIPG MUST BE APPLIED AND BOLTS ATTACHING THE TWO CASES TIGHTENED TO TORQUE SPECIFICATION WITHINT **15 MINUTES**.
- ONCE THE APPLICATION OF THE FIPG HAS BEGUN, THE MATING CASE MUST BE INSTALLED WITHIN **THREE MINUTES** FROM STARTING.
- By the time the inverter has been installed in the vehicle, the FIPG is cured enough for the customer to drive the vehicle.
- Wipe off the excess after use. Wrap the product in saran wrap and store in a temperature-controlled environment. Like how one would keep a paint brush they are using and don't want the paint to dry while they do something else.

FIPG APPLICATION (continued)

- a) Prepare to apply a 3.0mm diameter bead of sealant to the inverter case sub-assy using the instructions that follow. (Do not apply the FIPG to the converter case sub-assy)



*a	FIPG 1282C Application area
*b	3.0mm
*c	Approx. 3-6mm

IMPORTANT:

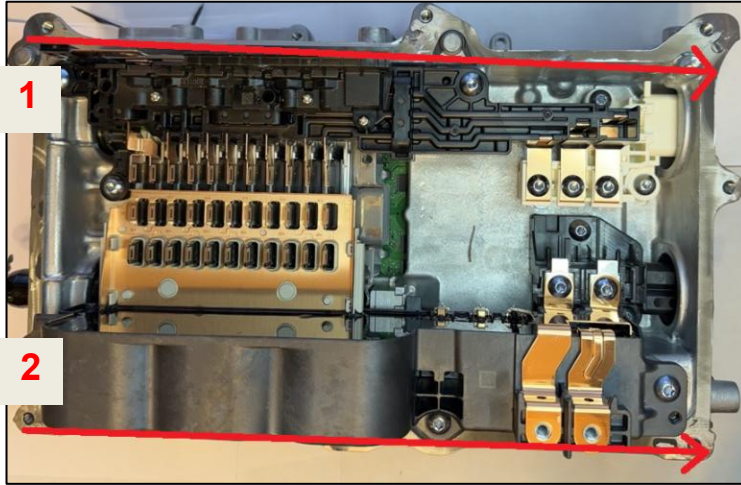
- The 1282C FIPG may not be applied on the circumference of the inverter case sub-assy in one operation.
- The 1282C FIPG should be applied in four straight and smooth steps. This technique provides clear visibility and easy movement around the inverter's protruding sections when targeting the application area.



HINT: Use the small metal handle as shown to tightly roll the FIPG tube. Each tube will repair two inverters.

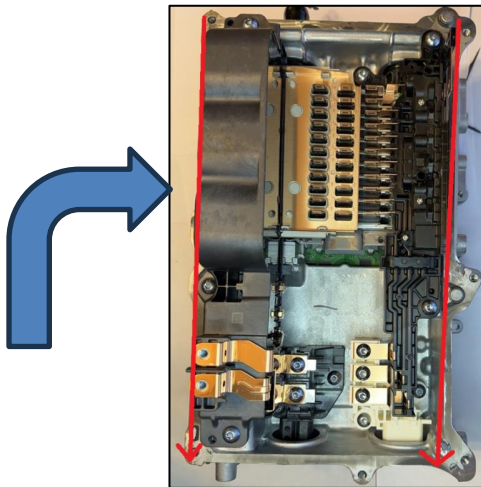
Be sure to clean the nozzle and return the cap to the FIPG tube when complete and keep it with the inverter covers and beam style torque wrench for the next 25TA15 Safety recall vehicle.

FIPG APPLICATION (continued)

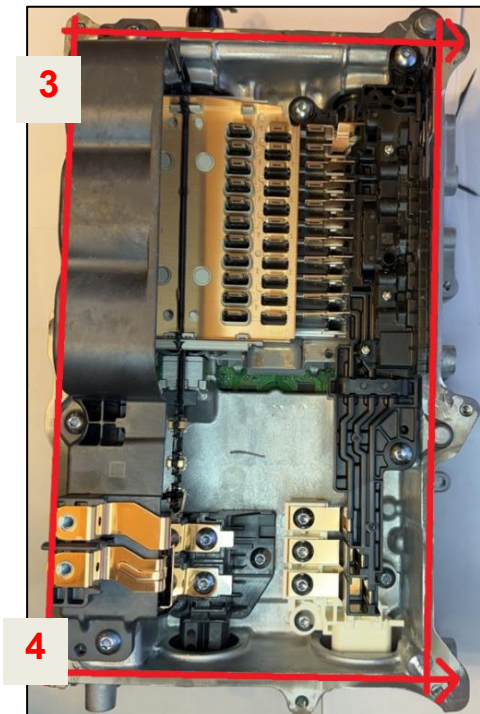


b) For FIPG bead (1), start at the left side near the number (1), and apply from left to right, as shown.

c) Next apply in the same manner starting from location two (2).

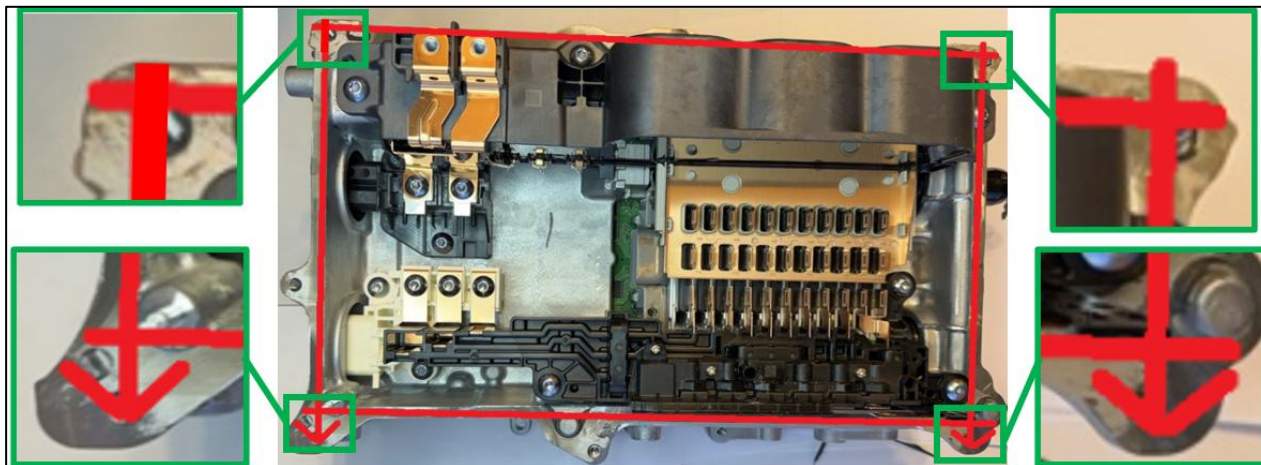


d) Rotate the assembly 90 degrees.



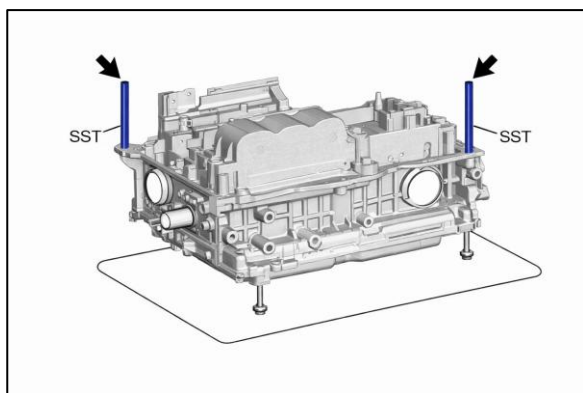
e) Next apply in the same manner starting from location three (3), and then proceed to do the same starting from location four (4).

FIPG APPLICATION (continued)

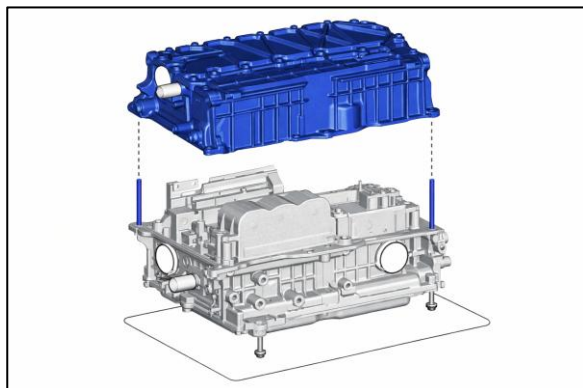


Note the overlap of the FIPG in each of the four corners.

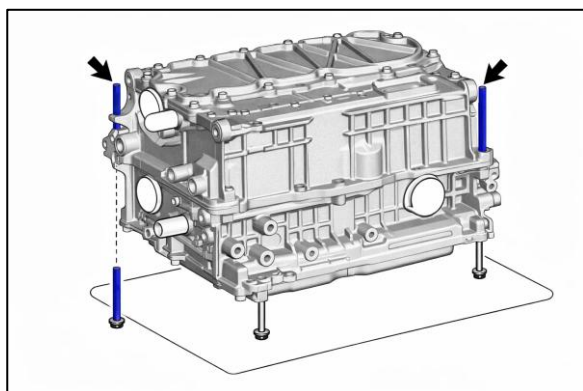
5. INVERTER and CONVERTER CASE ASSEMBLY (1/2)



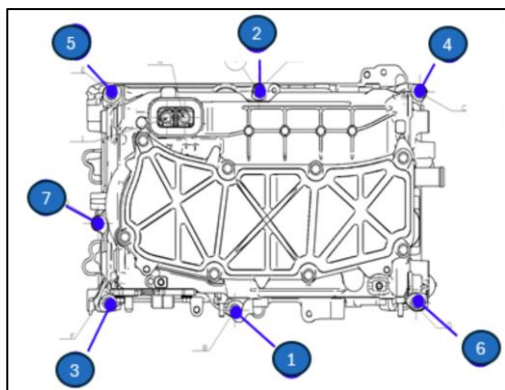
- a) If removed from FIPG application, install the two SST Guide pins by hand in the inverter case.



- b) Insert converter case sub-assy vertically along the SST guide pins

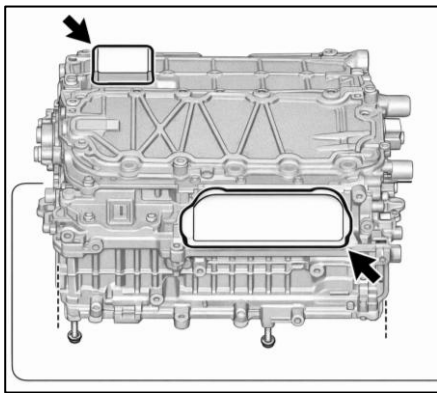


- c) Remove the guide pin SSTs

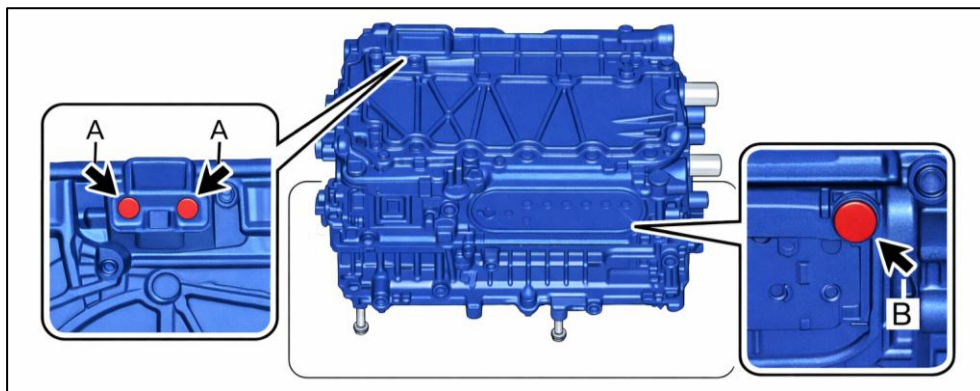


- d) Install **7 NEW** bolts from the repair kit in the order shown. This will help to equally seat the cases with the FIPG material present.
- e) Apply torque 2X to ensure all bolt positions maintain final torque
- Torque: 6.8 Nm.**

6. CONVERTER CASE SUB-ASSY ASSEMBLY (2/2)

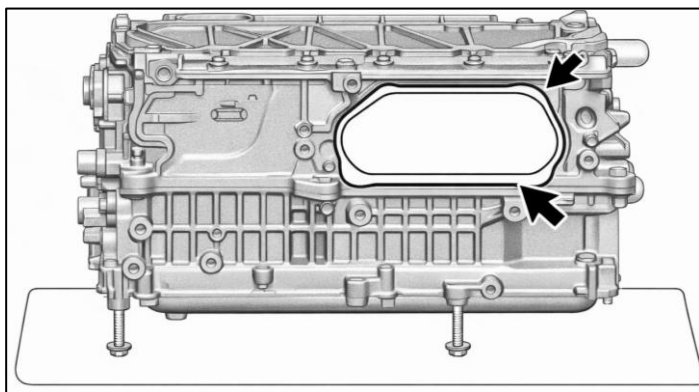


- a) Remove the masking tape from the two openings



- b) Install (2) bolts in position "A"
Torque: 6.0 Nm.

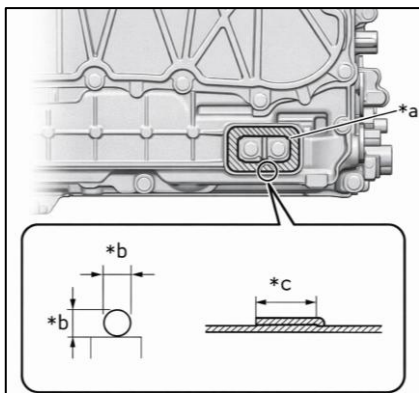
- c) Install (1) bolts in position "B"
Torque: 5.0 Nm.



- d) Mask the large opening over "A" bolts with masking tape.

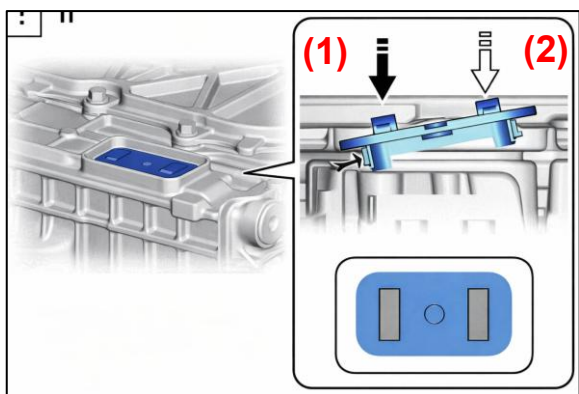
Note: Inverter drain plug will be assembled in the next step, so no masking is needed.

7. INSTALLING THE **NEW** INVERTER DRAIN PLUG



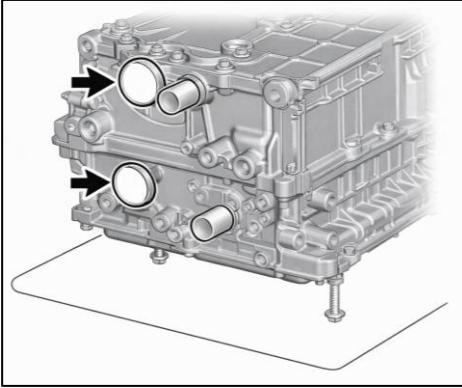
- a) By the time the inverter has been installed in the vehicle, the FIPG is cured enough for the customer to drive the vehicle.
- b) On the converter case SUB-ASSY, apply a 3.0 mm diameter bead of sealant 1282 C is to the position shown in the figure
- c) After applying the FIPG sealant 1282 C, install the **NEW** inverter drain plug from the repair kit within 3 minutes

*a	FIPG 1282C Application area
*b	3.0mm
*c	Approximately 20mm

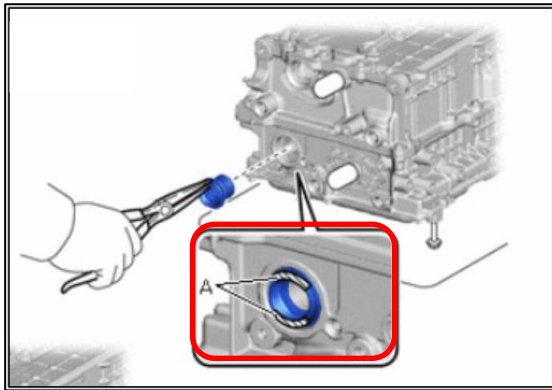


- d) Start by pressing at position (1) followed by position (2).
- e) Press the position shown by the two arrows in the figure and insert the inverter drain plug into the assembly.

8. INSTALLING THE **NEW** INVERTER COOLING PIPE CLAMP (1/2)



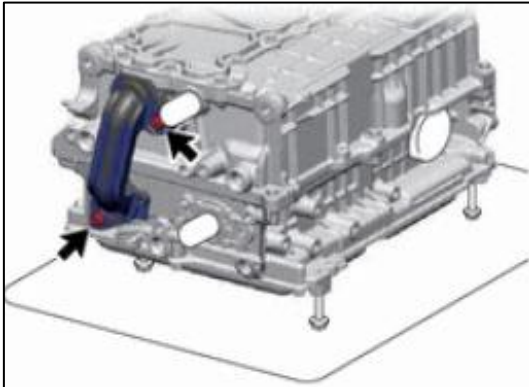
a) Peel off the tape from the two openings.



b) Using needle nose pliers, pull the “A” part of the gasket. Be careful not to scratch the cap.

c) Remove it from the inverter ASSY.

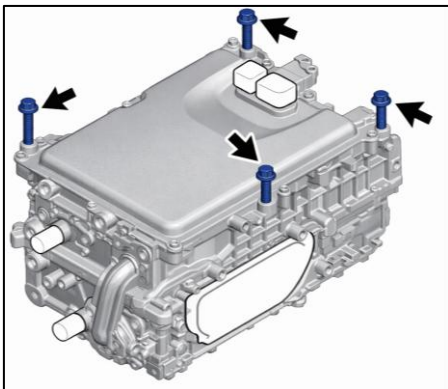
9. INSTALLING THE **NEW** INVERTER COOLING PIPE CLAMP (2/2)



HINT: Inverter cooling pipe clamp gasket is integrated with the inverter cooling pipe clamp and does not need to be assembled separately

a) Install the **NEW** inverter cooling pipe from the repair kit.

Torque: 5.0 Nm.

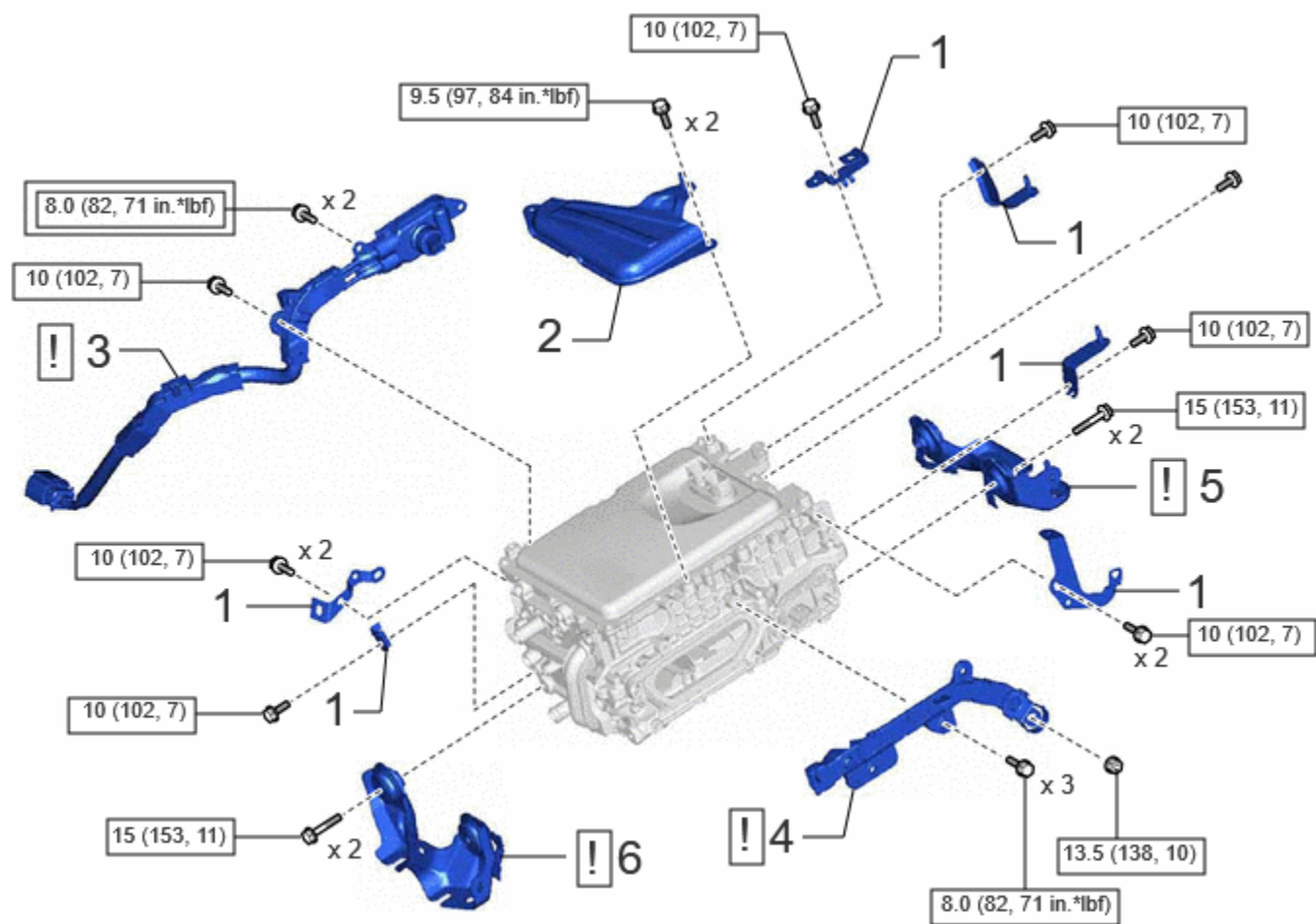


b) Turn inverter ASSY upside down.

c) Remove four jig stand bolts.

XIII. ASSEMBLY OF THE INVERTER (NEW/REPAIRED)

[↶ Return to Table of Contents](#)



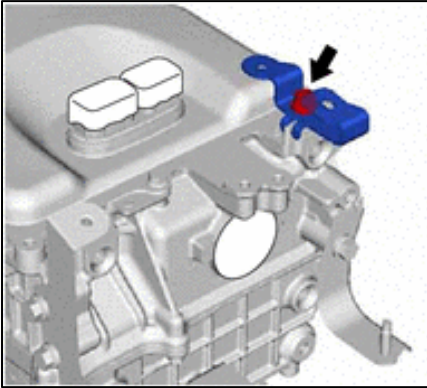
CAUTION:
HAND START ALL FASTENERS

	Description	Bolt/nut Count	Torque value (Nm)
1	WIRE HARNESS CLAMP BRACKET	9	10
2	INVERTER PROTECTOR	2	9.5
3	HV AIR CONDITIONING WIRE	2	8.0
		1	10
4	INVERTER BUS-BAR PLATE SUB-ASSEMBLY	3	8
		1	13.5
5	NO. 2 INVERTER BRACKET	2	15
6	NO. 1 INVERTER BRACKET	2	15

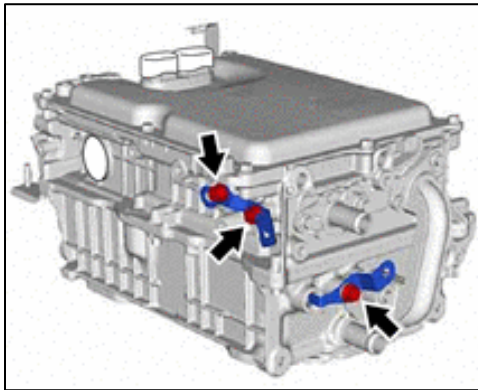
1. BRACKET AND WIRE INSTALLATION



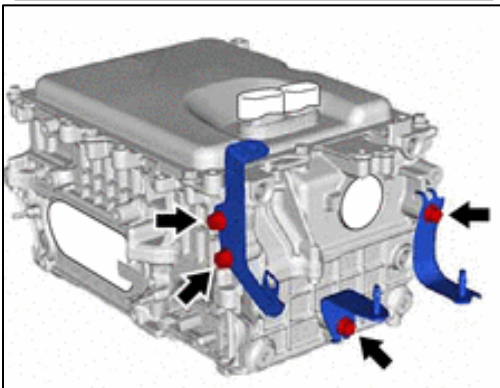
- a) Install top front Wire Harness (W/H) Bracket/Protector, (2) – 10mm bolts
Torque: 9.5 Nm



- b) Top Pass Side remove Wire Harness (W/H) Bracket
c) (1) – 10mm bolt
Torque: 10 Nm



- d) Install (3) - 10mm bolts
Torque: 10 Nm



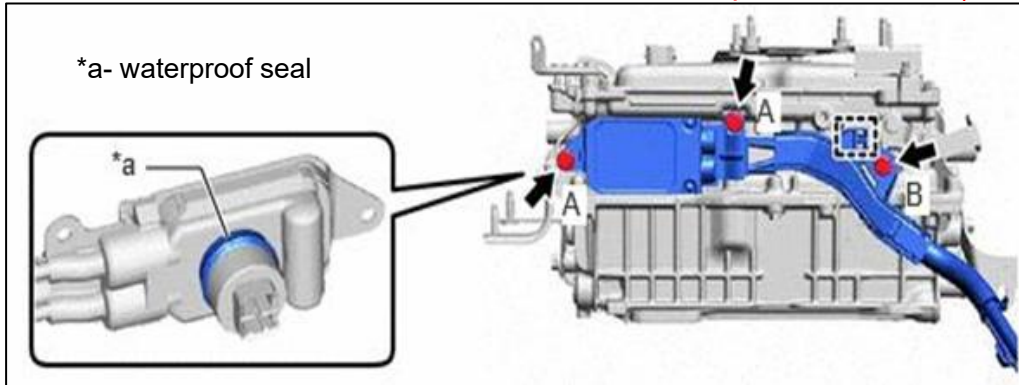
- e) Driver side rear inverter - install Wire Harness (W/H) Bracket
f) Install (4) – 10mm bolts
Torque: 10 Nm

2. HV AIR CONDITION WIRE INSTALL

CAUTION:

- Do not touch the sealing surface of the inverter ASSY.
- Do not touch the waterproof seal or terminals of the HV air conditioner wire.
- Be careful not to damage the terminal parts. Wrap masking tape around the terminals to protect them.

Converter and Inverter Case SUB-ASSY must be placed on SST. (anti-static mat).



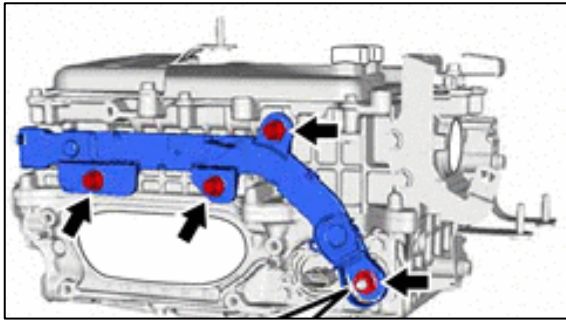
- Install the HV air conditioner wire to the inverter ASSY
- Mask the ends of the cable to prevent contamination or damage.

Torque:

Bolt A: 8.0 Nm

Bolt B: 10 Nm

3. INVERTER BUS BAR PLATE SUB-ASSY INSTALL



- Engage the clamp and connect the inverter bus-bar plate sub-assembly to the hybrid motor control inverter assembly with the 3 bolts and nut.

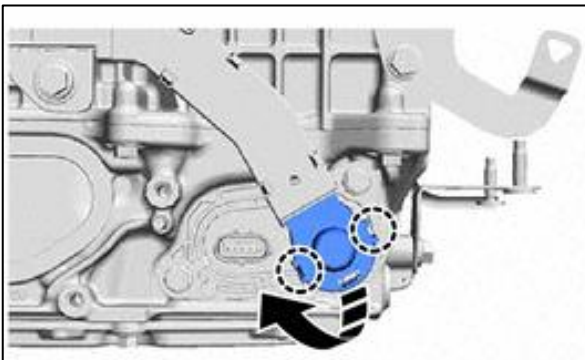
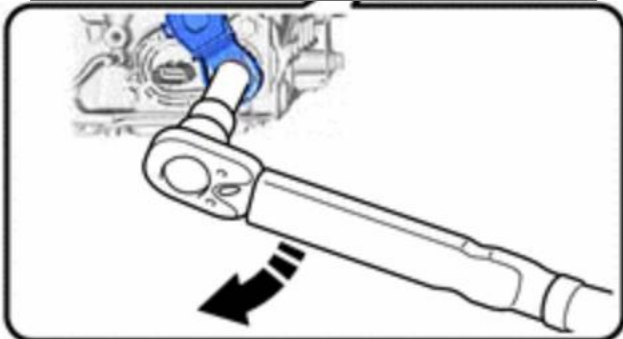
Torque:

Bolt - 8.0 Nm

Nut - 13.5 Nm

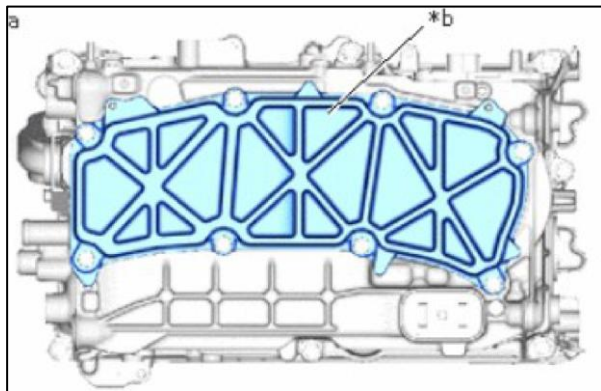
NOTICE:

- Move the tool in the downward direction to tighten the nut as shown in the illustration.
- To avoid damaging the threads, be sure to perform the procedure by hand.

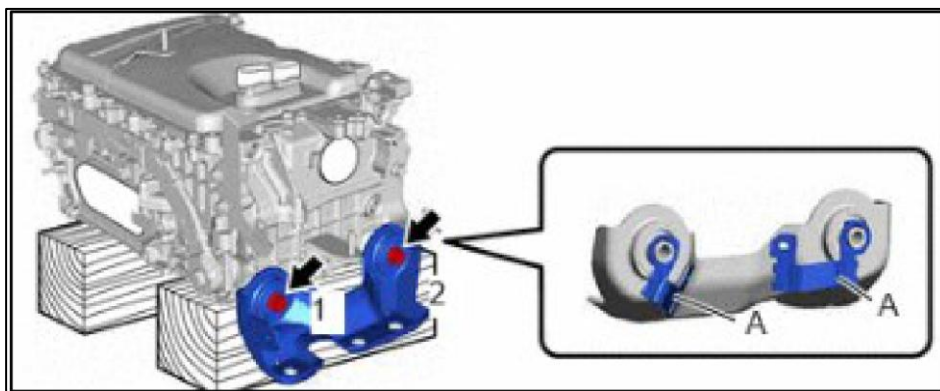


- Engage the 2 claws

4. INSTALL NO. 2 INVERTER BRACKET



- a) Place the inverter ASSY so that it is supported on the *b surface in blue. Setting the inverter on other surfaces can damage it.



- b) Set the hybrid motor control inverter assembly on wooden blocks.
c) Temporarily install the No. 2 inverter bracket to the hybrid motor control inverter assembly with the 2 bolts.

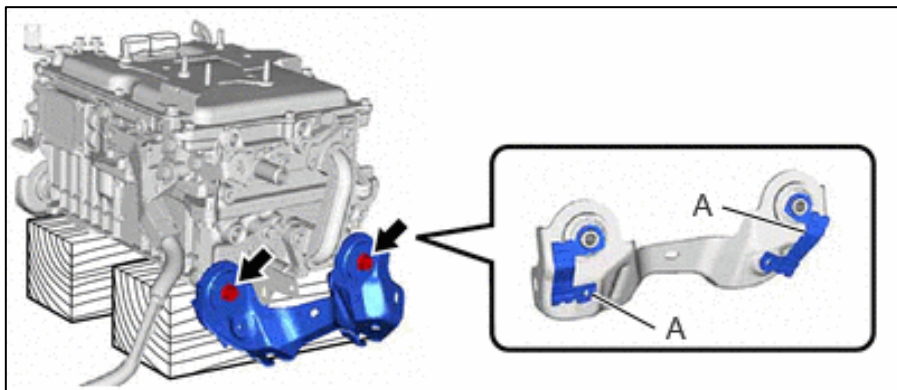
NOTICE:

Do not touch portion (A) of the No. 2 inverter bracket.

- d) Fully tighten the 2 bolts in the order shown in the illustration.

Torque: 15 Nm

5. INSTALL NO. 1 INVERTER BRACKET



- a) Temporarily install the No. 1 inverter bracket to the hybrid motor control inverter assembly with the 2 bolts

NOTICE:

Do not touch portion (A) of the No. 1 inverter bracket.

- b) Fully tighten the 2 bolts in the order shown in the illustration.

Torque: 15 Nm

XIV. INSTALLING THE REPAIRED/REPLACED INVERTER IN THE VEHICLE

[↪ Return to Table of Contents](#)

1. TEMP SET INVERTER TO CONNECT AC WIRES CLEAR INVERTER AREA OF WIRES



- a) Be careful not to damage any surrounding components

NOTICE:

- When installing the hybrid motor control inverter assembly, be careful not to damage the parts around it.
- To prevent damage, do not hold the hybrid motor control inverter assembly by the connectors, brackets or cooling pipes.
- To prevent damage due to static electricity, do not touch the terminals of the disconnected connectors.
- Make sure that the hybrid motor control inverter assembly is positioned so that the stud bolts are in contact with the base of the U-shaped portions of the No. 1 inverter bracket.

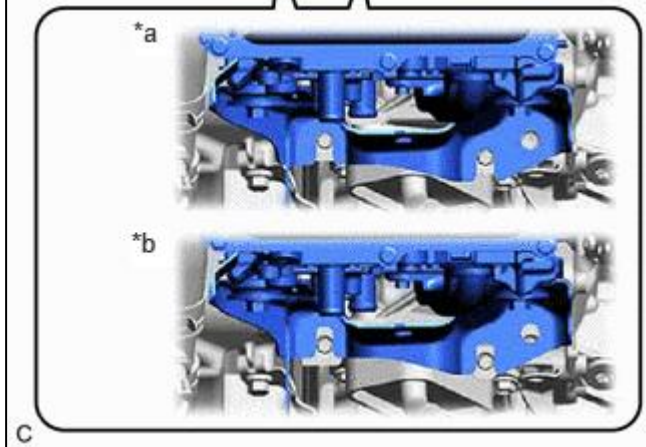
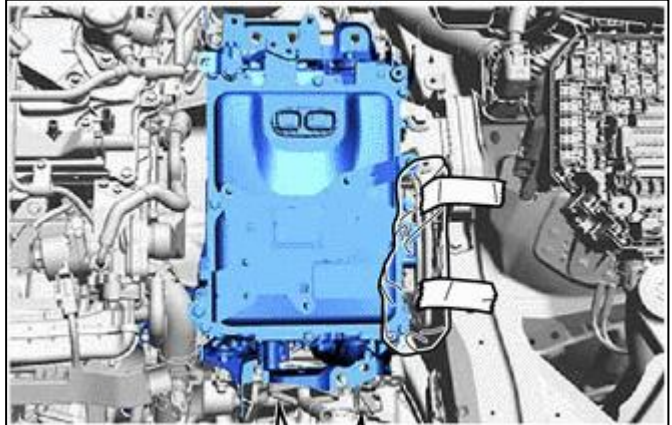
CAUTION:

- * HAND START ALL NUTS AND BOLTS FOR REINSTALLATION ***
Confirm no LLC on components (can impact torque)

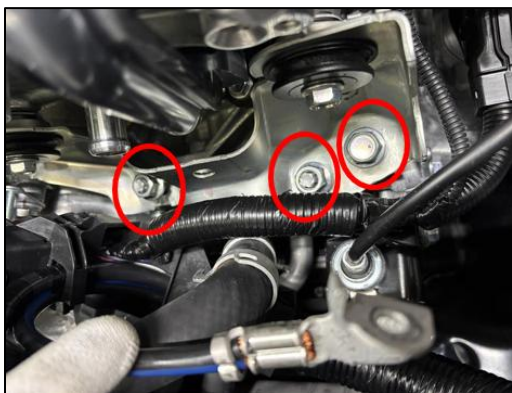
2. SET INVERTER BACK ONTO BODY STUDS UNTIL FULLY SEATED

***a = Correct**

***b = Incorrect**



3. HAND START INSTALL INVERTER TO T/A BRACKET (FRONT)



- a) Hand start (1) - 14mm bolt
- b) Hand start (2) - 14mm nuts

4. HAND START INSTALL INVERTER TO T/A BRACKET (REAR)

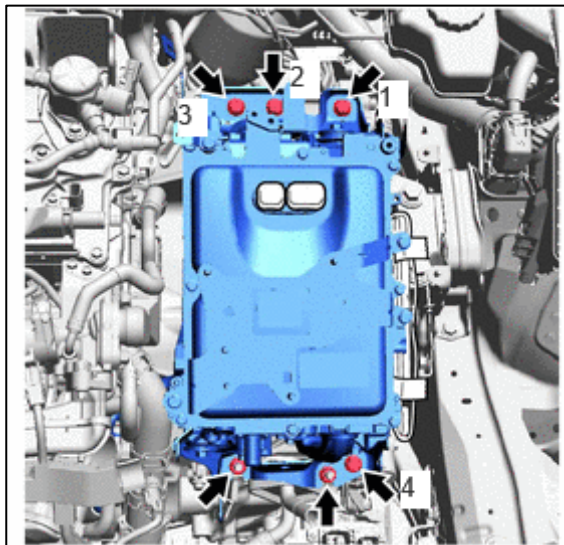


- a) Hand start (3) - 14mm bolts

HINT:

If the bolts and nuts are not tightened appropriately, the hybrid motor control inverter assembly may make an abnormal noise.

5. INVERTER FASTENER TIGHTENING

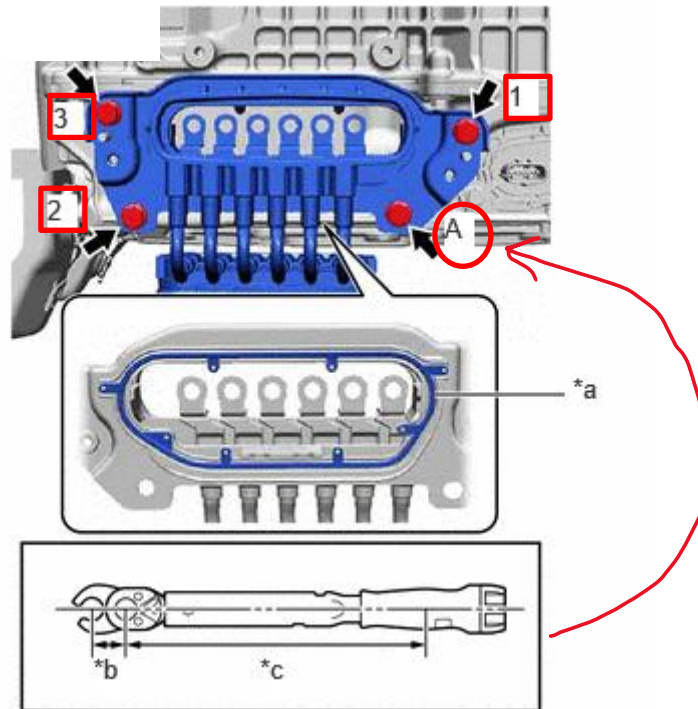


- a) Fully tighten the 4 bolts in the order shown in the illustration.
Torque: 55 Nm
- b) Fully tighten the 2 nuts.
Torque: 55 Nm

6. CONNECT MOTOR CABLE

NOTICE:

- Do not allow any foreign matter or water to enter the hybrid motor control inverter assembly.
- Do not touch the waterproof seal or terminals of the motor cable.
- Do not damage the terminals, connector housing or hybrid motor control inverter assembly during connection.
- Be careful to avoid cutting or pinching the waterproof seal during installation.



*a	Waterproof Seal	*b	10 mm Union Nut Wrench Fulcrum Length
*c	Torque Wrench Fulcrum Length		

a) Temporarily install the motor cable to the hybrid motor control inverter assembly by hand starting the (4) – 10mm bolts.

b) Tighten (3) -10mm bolts in the order shown in the illustration.

1 2 3

Torque: 8.0 Nm

c) Using a 10mm union nut wrench, fully tighten the bolt(A).

A

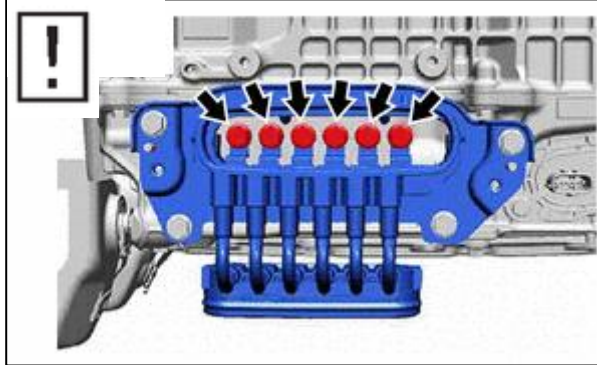
Specified Tightening Torque : 8.0 Nm

CONNECT MOTOR CABLE (continued)

HINT:

- Calculate the torque wrench reading when changing the fulcrum length of the torque wrench.
Click here [INFO](#)
- When using a union nut wrench (fulcrum length of 22 mm (0.866 in.)) + torque wrench (fulcrum length of 162 mm (6.38 in.)): 7.0 Nm

d) Temporarily install the 6 internal bolts.



NOTICE:

- To prevent the threads from being damaged, temporarily tighten the 6 bolts by hand.
- Do not damage the terminals, connector housing or hybrid motor control inverter assembly during connection.

e) Fully tighten the 6 internal bolts.

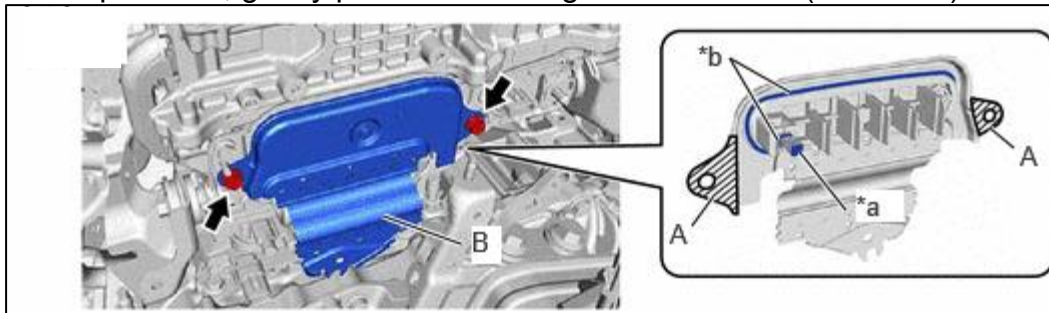
Torque: 8.0 Nm (torque is critical, do not over torque)

NOTICE:

- Do not damage the terminals, connector housing or hybrid motor control inverter assembly during connection.
- Be sure to use a torque wrench to tighten the bolts.

7. INSTALL THE UPPER INVERTER COVER SUB-ASSEMBLY

a) With EVEN pressure, gently push cover straight onto Inverter (until flush)



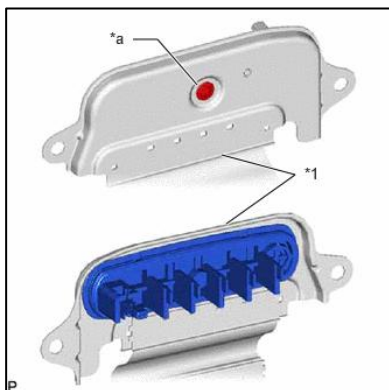
*a	Interlock	*b	Waterproof Seal
----	-----------	----	-----------------

b) Hand start the (2) – 10mm bolts.

Torque: 8.0 Nm

NOTICE:

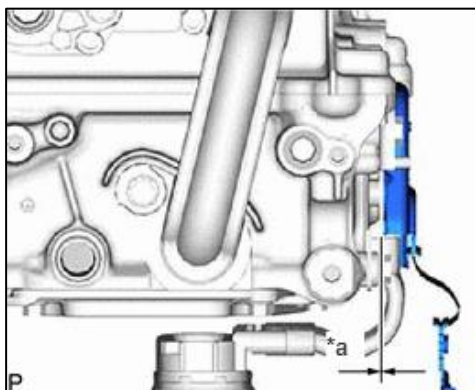
- To avoid deforming portion (A) of the inverter cover, do not hold portion (A) when installing.
- Be careful not to scratch or damage portion (B) of the inverter cover.
- Visually confirm that the inverter cover waterproof seal is securely installed before installing the upper inverter cover sub-assembly.
- Do not touch the waterproof seal of the upper inverter cover sub-assembly.
- Make sure that the interlock is fully engaged.
- Do not damage the terminals, interlock connector or hybrid motor control inverter assembly during installation.
- Do not allow any foreign matter or water to enter the hybrid motor control inverter assembly.
- Do not remove or excessively tighten the screw of the upper inverter cover sub-assembly.



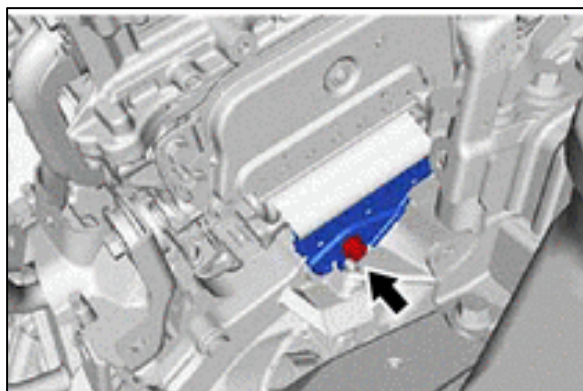
*1	Inverter Cover
*a	Screw

- Although the upper inverter cover sub-assembly may feel loose, this is not due to a malfunction.
- Push in the upper inverter cover sub-assembly until it contacts the hybrid motor control inverter assembly.

INSTALL THE UPPER INVERTER COVER SUB-ASSY (contained)

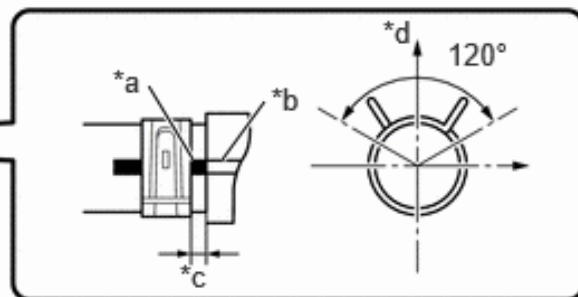
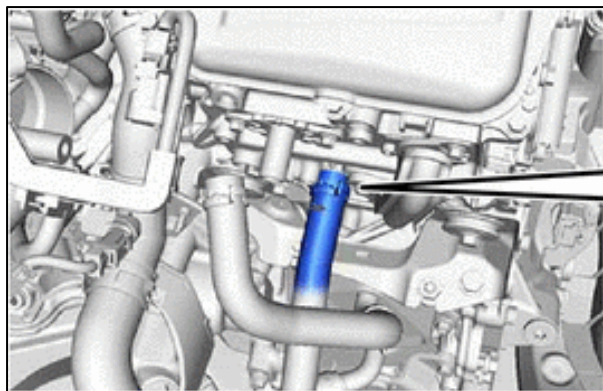


*a	No Gap
----	--------



- c) Hand start the inverter cover (1) – 10mm bolt to the hybrid vehicle transaxle assembly.
Torque: **8.0 Nm**

8. CONNECT NO. 4 INVERTER COOLING HOSE



*a	Alignment Mark	*b	Rib
*c	2 to 7 mm (0.0787 to 0.2756 in.)	*d	Up

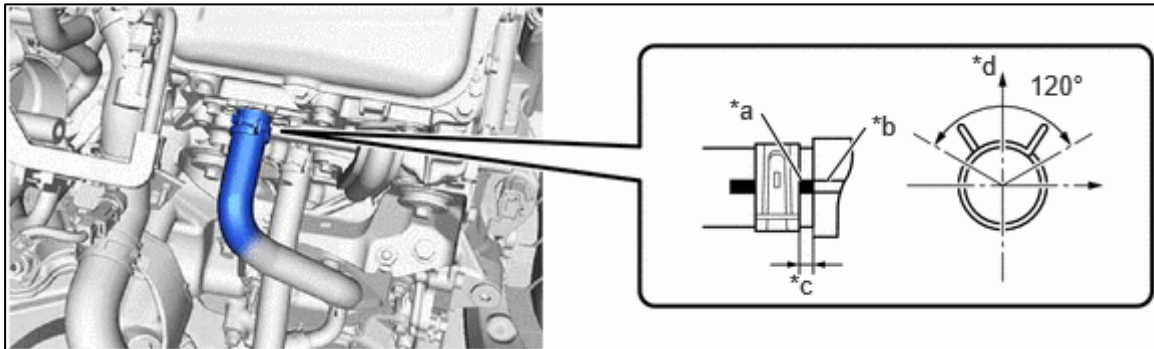
- a) Connect the inlet No. 4 inverter cooling hose to the hybrid motor control inverter assembly and slide the clip to secure it.

NOTICE:

- To prevent foreign matter from entering the hybrid motor control inverter assembly and inverter cooling system, do not remove the pieces of cloth from the pipe and disconnected hose until installation.
- Make sure to align the alignment mark of the hose with the rib of the hybrid motor control inverter assembly.

- Make sure that the clip is positioned as shown in the illustration.

9. CONNECT NO. 1 INVERTER COOLING HOSE



*a	Alignment Mark	*b	Rib
*c	2 to 7 mm (0.0787 to 0.2756 in.)	*d	Up

- a) Connect the inlet No. 1 inverter cooling hose to the hybrid motor control inverter assembly and slide the clip to secure it.

NOTICE:

- To prevent foreign matter from entering the hybrid motor control inverter assembly and inverter cooling system, do not remove the pieces of cloth from the pipe and disconnected hose until installation.
- Make sure to align the alignment mark of the hose with the rib of the hybrid motor control inverter assembly.
- Make sure that the clip is positioned as shown in the illustration.

10. REINSTALL ENGINE WIRES 8 AND 11 FROM THE TABLE ABOVE.



- a) HAND START (2) - 10mm bolts
Torque: 10 Nm

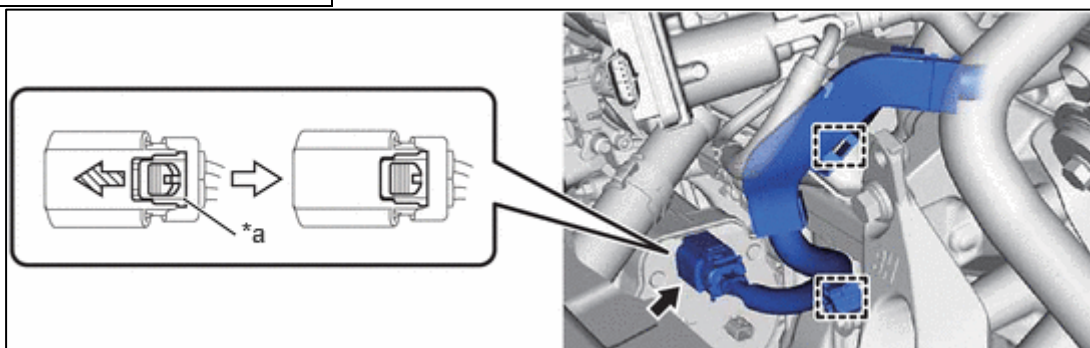
NOTICE:

- Do not touch the waterproof seal or terminals of the connectors.
- To prevent damage due to static electricity, do not touch the terminals of the disconnected connectors.

11. CONNECT HV AIR CONDITIONING WIRE

*a	Green-Colored Lock
	Slide

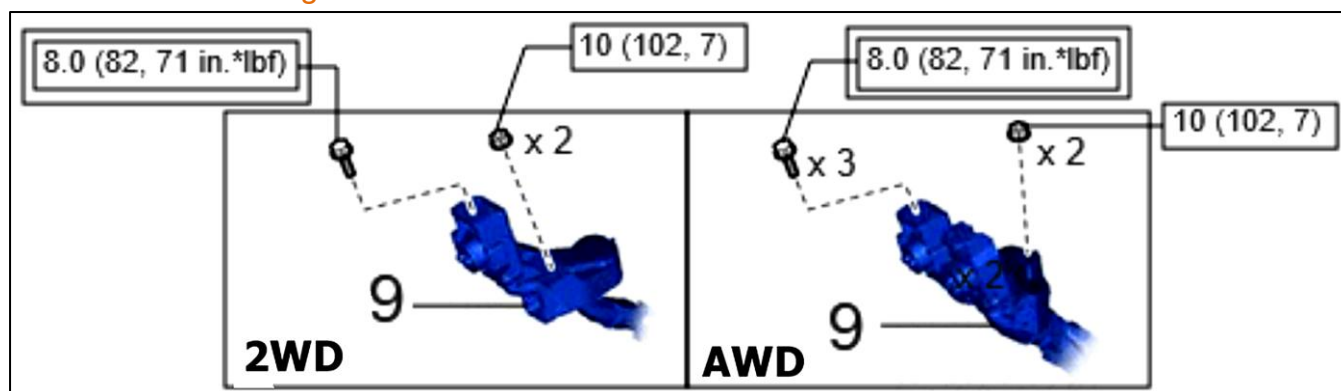
- Connect the connector and slide the green-colored lock as shown in the illustration to securely lock it.
- Engage the (2) clamps.



12. CONNECT FLOOR UNDER WIRE

NOTICE:

- Do not allow any foreign matter or water to enter the hybrid motor control inverter assembly.
- Do not touch the waterproof seal or terminals of the connector.
- Do not damage the terminals, connector housing or hybrid motor control inverter assembly when connecting the connector.

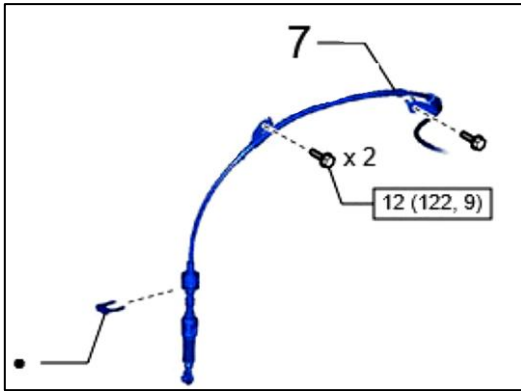


- Hand Start 10mm bolt(s) and 10mm bolt(s).

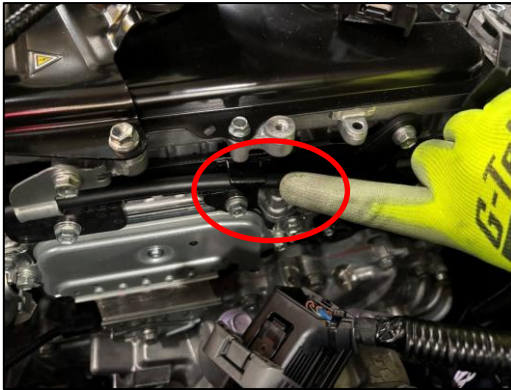
Torque: bolts to 8.0 Nm

Torque: nuts to 10 Nm

13. INSTALL TRANSMISSION CONTROL CABLE ASSEMBLY



- a) Hand start (2) - 10mm bolts
Torque: 12 Nm

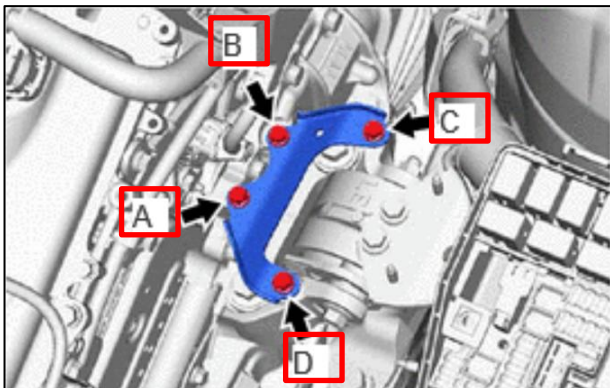


- b) Tuck center of Shifter Cable under black hook

14. REINSTALL BLACK BRACKET ON LEFT HAND ENGINE MOUNT

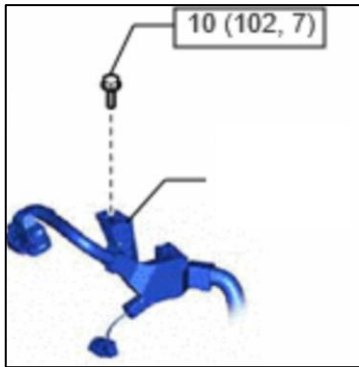


- a) Hand start the (4) - 10mm bolts



- b) Temporarily tighten the bolt (A), and then fully tighten the (4) bolts in the order of (B), (C), (D) and (A).
Torque: 8.0 Nm

15. REINSTALL ENGINE ROOM MAIN WIRE



- a) Temp set MG Wire Harness (W/H)
Clip to Bracket and hand start (1) –
10mm bolt

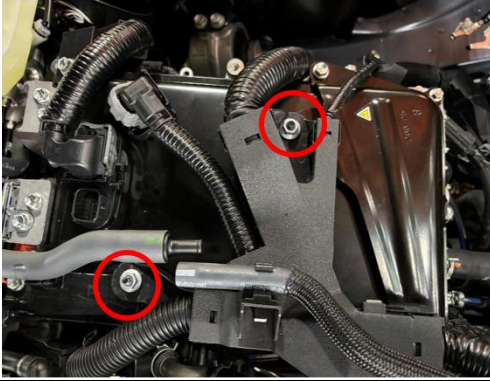
16. RECONNECT LOWER WIRE HARNESS (W/H) CONNECTOR LEFT HAND ENGINE MOUNT



17. RECONNECT DR SIDE INVERTER SADDLE CONNECTION



18. REINSTALL ENGINE WIRE HARNESS (W/H) ON BODY CLIP AND TWO STUDS AT TOP OF INVERTER



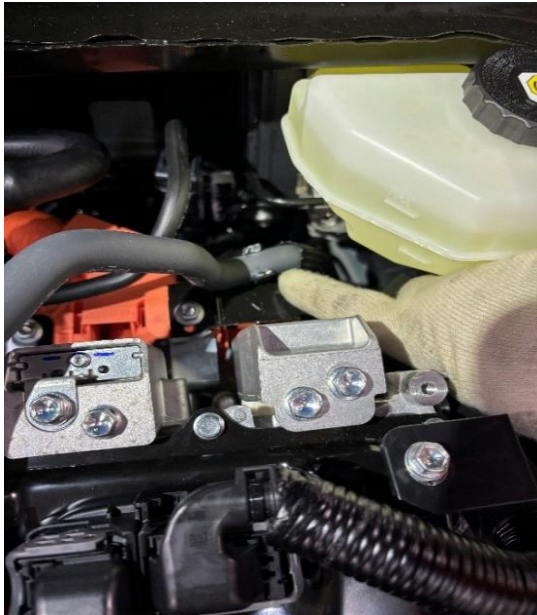
- a) Hand start (2) – 10mm nuts
- Torque: 10 Nm**

19. REINSTALL PASS SIDE INVERTER SADDLE CONNECTION



- a) Push down and lock saddle (lever lock)
- b) Be careful not to bend pins or damage any connections

20. REINSTALL EVAP HOSE IN BLACK BRACKET AT REAR OF MG CABLE AND BLACK BRACKET AT TOP OF INVERTER



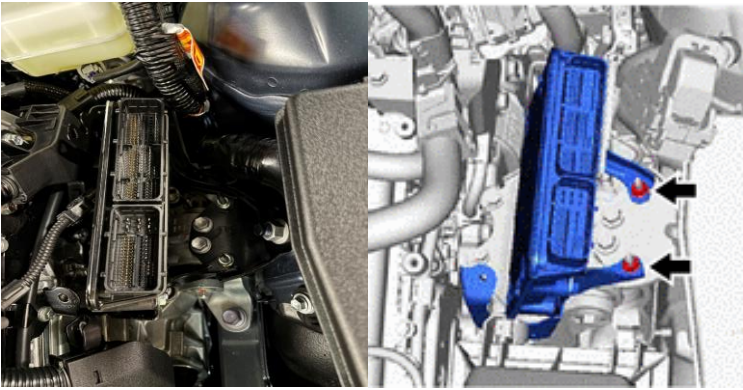
21. RECONNECT TO OPPOSITE EVAP HOSE



a) Line up paint marks and fully insert

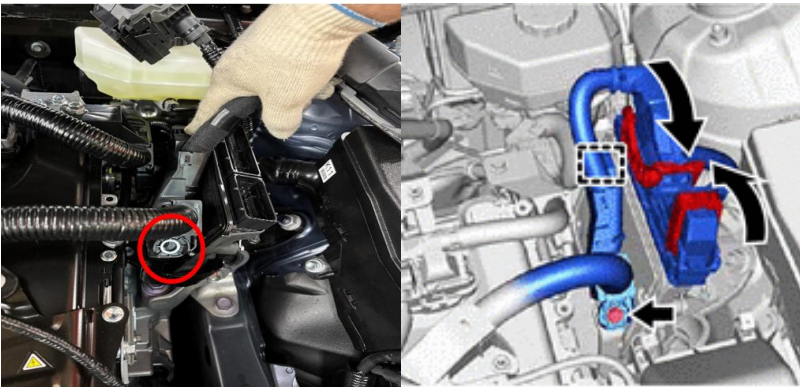
NOTE: 2WD only has top Inverter Clip for Evap Hose

22. REINSTALL ENGINE ECU *HANDLE ECU WITH CARE*



a) Hand start (2) – 10mm nuts
Torque: 8.0 Nm

23. CLIP LARGE ENGINE ECU CONNECTOR WIRE BACK TO BODY CLIP AND INSTALL BOLT



a) Hand start (1) – 10mm engine wire bolt
Torque: 10 Nm

24.RECONNECT TWO ENGINE ECU SADDLE CONNECTIONS * HANDLE WITH CARE



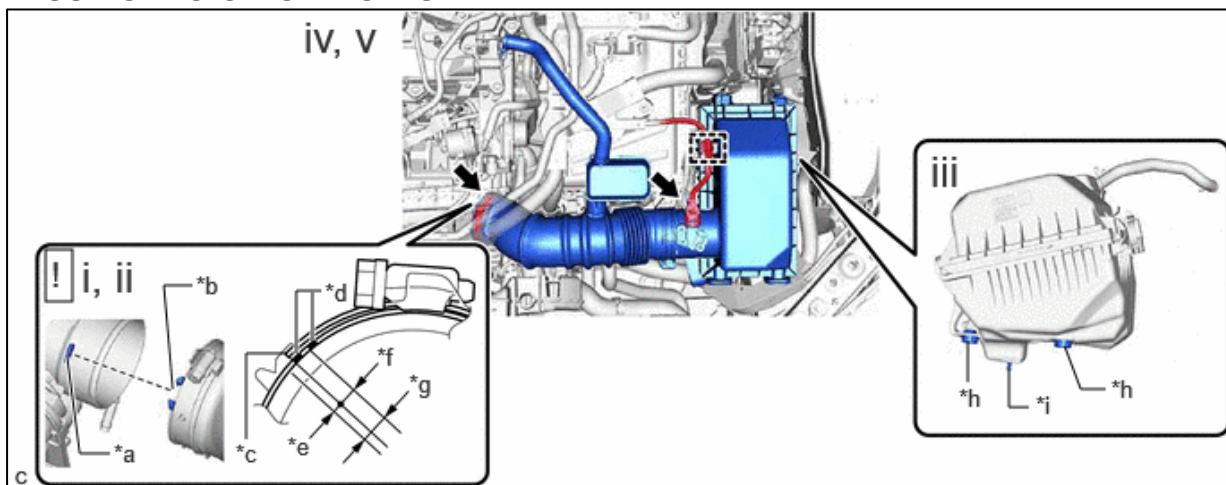
a) Lock (2) saddles

25.REINSTALL ENGINE WIRE HARNESS (W/H) BLACK CLAMP AT FRONT OF INVERTER



a) Wire wrap

26.REINSTALL AIR BOX ASSY INTAKE TUBE TO THROTTLE BODY REINSTALL AIR BOX ASSY ONTO ONION BOLTS

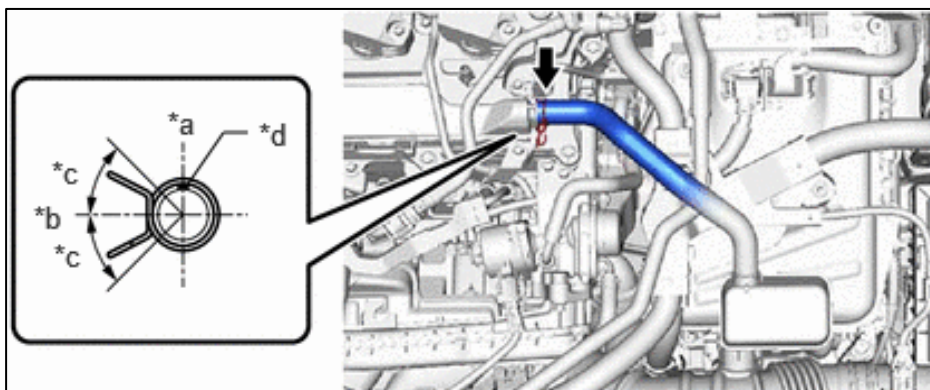


*a	Protrusion	*b	Cutout
*c	Hose Clamp	*d	Paint Mark
*e	2 mm (0.0787 in.)	*f	4 mm (0.157 in.)
*g	End of Hose Clamp Location	*h	Grommet
*i	Pin	-	



- a) Tighten clamp until it reaches secondary paint mark
- b) Gently pull up to confirm fully seated

27.CONNECT NO. 2 VENTILATION HOSE



- a) Connect the No. 2 ventilation hose to the cylinder head cover sub-assembly and slide the clip to secure it.

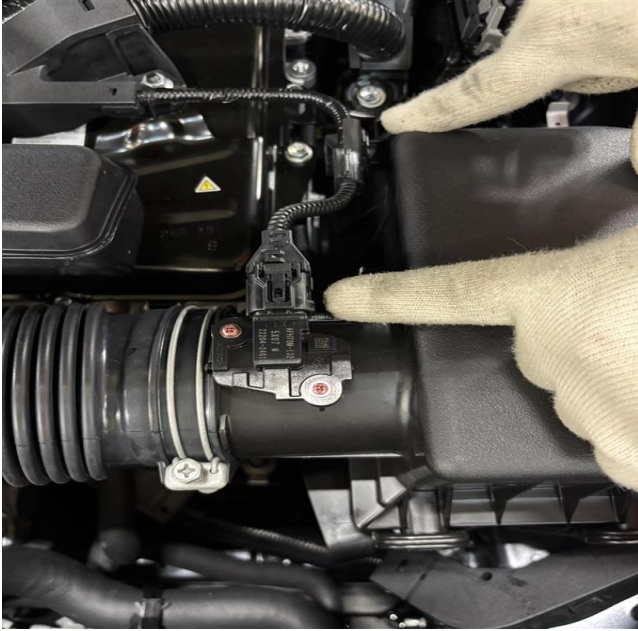
*a	Top	*b	Front of Vehicle
*c	45°(Claw of Clip Location)	*d	Paint Mark

28.RECONNECT PCV VALVE HOSE TO VALVE COVER AND REINSTALL CLAMP



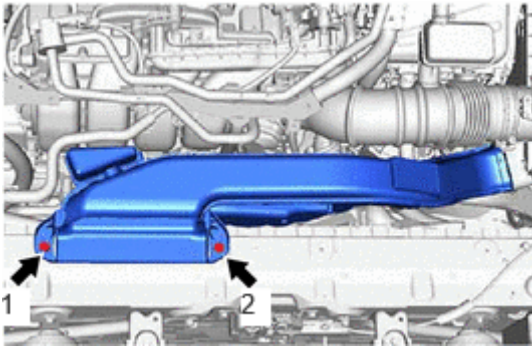
- a) Clamp must face to front of vehicle
- b) (2-5mm from end of Hose)

29. RECONNECT MASS AIR FLOW SENSOR AND INSTALL WIRE HARNESS (W/H) CLIP TO AIR BOX



- a) Mass air sensor
- b) W/H Clip

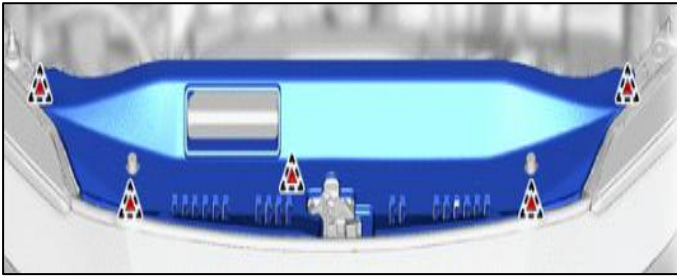
30. INSTALL INLET AIR CLEANER ASSEMBLY



- a) Install the inlet air cleaner assembly with the 2 bolts in the order shown in the illustration.

Torque: 8.0 Nm

31.REINSTALL RADIATOR COVER

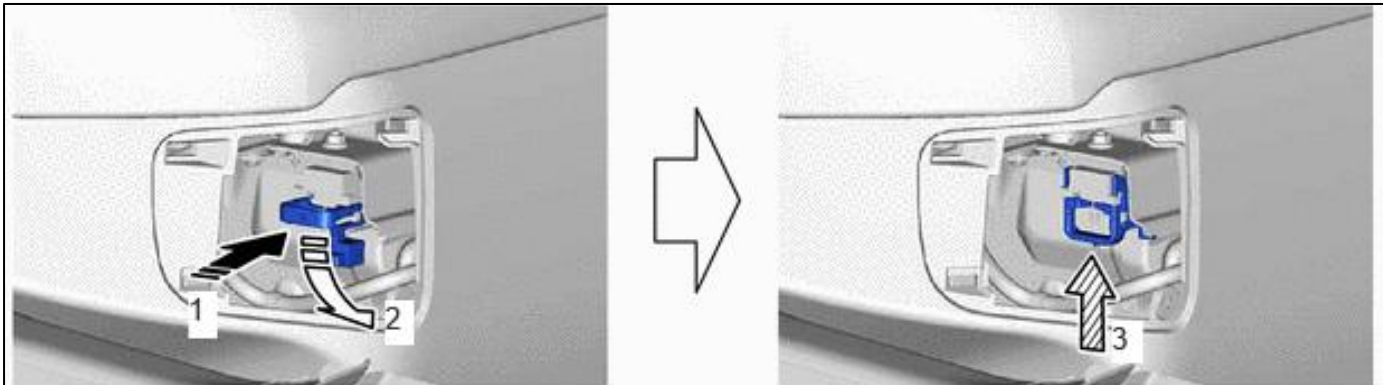


- a) Install Radiator Cover using 5 Clips



32.INSTALL SERVICE PLUG GRIP

- a) While wearing insulated gloves, and temporarily install the service plug grip as indicated by the arrow (1) shown in the illustration.
- b) Rotate the handle of the service plug grip 90° toward the HV battery and slide it in the direction indicated by the arrow (3) shown in the illustration until a click sound is heard to install the service plug grip.



33.RECONNECT 12V BATTERY - NEGATIVE TERMINAL



a) Torque: 5.4 Nm

34.INSTALL LUGGAGE TRIM SERVICE HOLE COVER

35.REMOVE INVERTER OVERFLOW BOTTLE CAP, REFILL AND BLEED



a) Slowly pour coolant into the inverter reserve tank assembly until it reaches the FULL line.

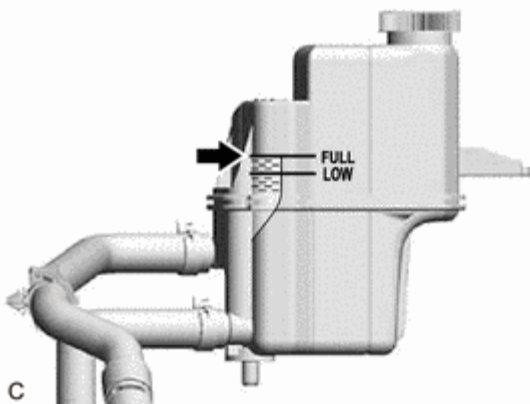
Standard Capacity: 1.8 liters (1.9 US qts, 1.6 Imp. qts)

b) Using GTS+ Enter the following menus:
Powertrain / Hybrid Control / Active Test /
Activate the Inverter Water Pump.

c) Activate the Inverter Pump

d) While adding coolant to the inverter reserve tank assembly to keep the coolant at the FULL line and compensate for the drop in the coolant level as the air bleeds, operate and stop the inverter water pump with motor assembly at 1 minute intervals.

e) After the air is completely bled from the cooling system, add coolant to the FULL line of inverter reserve tank assembly and install the reserve tank cap.



36. INSPECT FOR INVERTER COOLENT LEAK (per repair manual process)

37. ECU CONFIGURATION

HINT:

When disconnecting and reconnecting the auxiliary battery, there is an automatic learning function that completes learning when the respective system is used.

CAUTION:

If vehicle systems affect a voltage to reduce during reprogramming, it may disable the ECU in reprogramming, which concludes an ECU replacement.

a) Stabilize a power source on the vehicle side by shutting off as many following systems and parts as possible since they would generate an electrical load. Turn off all systems that add electrical load.

HINT:

- Exterior lighting systems
- Interior lighting systems (Make them unlit even when a door is open)
- Air conditioning system
- Audio/Navigation systems
- Seat belt warning system (Lock belt buckles by inserting tongue plates)
- Accessory parts of aftermarket installation
- Other, generic electrical parts (such as remote engine starter, security system)

b) Remove the fuse or relay for the electric fan.

c) Inspect the battery of the vehicle. (check if it has 11.8 v min. Of voltage.)

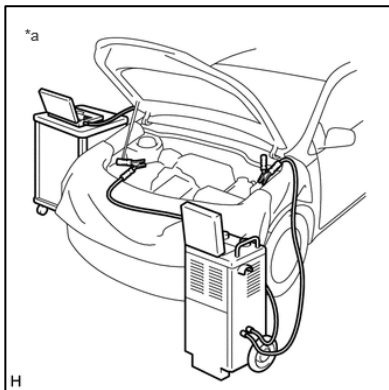
d) Conduct the inspection on the vehicle battery keeping the IG-ON condition after one minute of leaving with the IG on. Check if it has 11.8 V or more of voltage.

e) In case of a battery weak, charge it before reprogramming.

Note: (The inspection can be performed with no wait as one minute has already passed in the IG-ON condition if keeping the IG on from the previous step.)

CAUTION:

If the brake booster with accumulator pump assembly of a hybrid vehicle operates, a large current will flow and the battery charger alone will not be able to maintain a sufficient voltage. If a sufficient voltage cannot be maintained, ECU configuration will not be possible. Therefore, when performing ECU configuration for a hybrid vehicle, a battery for auxiliary charging must be connected in parallel with the battery charger. Check a deterioration level on the battery for auxiliary charge. (Do the check once a day.)



Note: For vehicles needing inverter replacement only.

CONNECT BATTERY CHARGER AND BATTERY FOR AUXILIARY CHARGING TO AUXILIARY BATTERY (BOOSTER TERMINAL)

f) Select "ECU Search" follow prompts

g) Powertrain/motor generator/utility/resolver initialization learn

ECU CONFIGURATION (continued)

CAUTION:

- Make sure that the ignition switch remains ON when performing ECU configuration, and that the engine is not started (for Gasoline Model) or the ignition switch is not turned to ON (READY) (for HEV Model).
- To prevent incidents related to unauthorized persons operating the GTS or vehicle, do not leave the vehicle unattended.

h) Turn on the battery charger.

i) In accordance with the display on the GTS, select and perform Health Check on the menu screen.

j) Confirm that "Yes" is not displayed in the "Configure" column of the GTS for any system.

k) If "Yes" is displayed in the "Configure" column of the GTS for any system, click "Yes" and perform ECU configuration in accordance with the display on the GTS.

HINT:

Perform ECU Configuration for each system.

l) After ECU configuration is complete, select and perform Health Check on the menu screen in accordance with the display on the GTS.

m) Confirm that "Yes" is not displayed in the "Configure" column of the GTS for any system, and clear the DTCs and vehicle control history (RoB).

CAUTION:

If "Yes" is displayed in the "Configure" column of the GTS for any system, perform ECU configuration again.

System	Monitor Status	Calibration	Update	Configure	RoB	DTC
	-	8989F4204400	?	No	-	0
		8989G4203000	?			
		892634238100	?			
	-	G911F4213001	?	No	●	0
		G911G4203001	?			
		892DF4201200	?			
	-	-	-	-	-	-
	-	-	-	-	-	-
	-	-	-	-	-	-

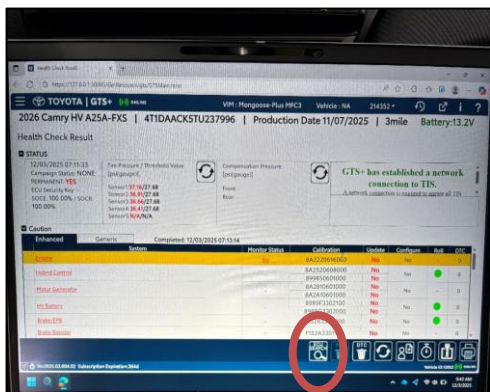
38. PERFORM RESOLVER LEARNING

Learning completes when vehicle is driven

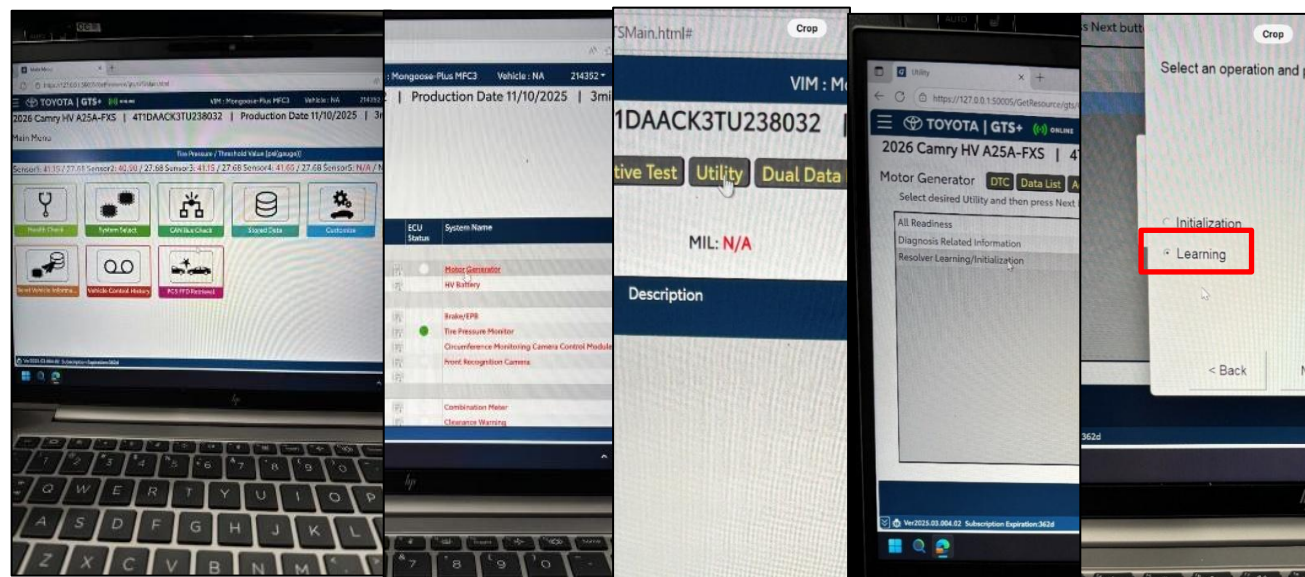


Perform a 2nd health check.

- a) Using GTS+, click the "Health Check" button on the Main Menu.



- b) Select "ECU Search" follow prompts
- c) Powertrain/motor generator/utility/resolver initialization learn



Set MG Resolver:

Run Drive Pattern RES2.

Learning must be performed on Generator (MG1), Motor (MG2) and Rear Motor (MGR) if AWD.

- a) Turn ignition switch to ON (READY) and wait until the READY indicator changes from blinking to illuminated.

NOTICE: Do not operate the accelerator pedal, shift lever or any switches until the READY indicator is illuminated.

HINT:

When the ignition switch is turned to ON (READY) during resolver learning, the engine will start.

It takes approximately 10 seconds for the READY indicator to illuminate after the ignition switch is turned to ON (READY).



- b) Move the shift lever to D.
- c) Move to a large open space in which you can drive to 25mph and coast to a stop without the use of the brake pedal.

- d) Accelerate the vehicle to between 30km/h (19 mph) and 40 km/h (25 mph), fully release the accelerator pedal and allow the vehicle to coast for *3 seconds.

NOTICE: Do not operate the accelerator pedal, brake pedal, shift lever or any switches while the vehicle is coasting

* Coast until RES 2 not adjusted light goes off

* If vehicle does not pass on first attempt, wait 5-10 minutes, before restarting at step **a.)** Try 2 more attempts before consulting repair manual. [HYBRID / BATTERY CONTROL: MOTOR GENERATOR CONTROL SYSTEM: UTILITY; 2025 - 2026 MY Camry HV \[04/2024](#)

[- _____\]](#)

39. AUTOMATIC LEARNING PERFORMED WHEN CABLE IS DISCONNECTED / RECONNECTED TO AUXILIARY BATTERY TERMINAL

Effect/Inoperative Function when Necessary Procedure not Performed	Necessary Procedure	Steering sensor zero point calibration
Front Camera System	Drive the vehicle straight ahead at 35 km/h (22 mph) or more for 5 seconds or more.	a) Start the hybrid control system. b) Drive the vehicle straight ahead at 35 km/h (22 mph) or more for 5 seconds or more. c) Turn the ignition switch off.

- 40.RESTORE CUSTOMER SETTINGS
- 41.CLEAR DTCs
- 42.(CALIFORNIA EMISSIONS RELATED CAMPAIGN ONLY)

The vehicle owner may require the Proof of Correction form for vehicle registration renewal. ***It is important to note that the forms are an official state document and blank forms must be secured to prevent misuse.***

The form is titled "Vehicle Emission Recall – Proof of Correction". It contains fields for License Number, Make, Year Model, Body Type, and Vehicle Identification Number. Below these are sections for Manufacturer, Recall Number, Dealer's Name, Address, City, State and Zip, Date, and Dealership's Authorized Signature. A note at the bottom states: "Return this certificate to DMV only when required – otherwise retain for your records."

Please complete the form and provide it to the owner. The first non-completed VINs will be submitted to the California state DMV by early September, 2026. If the vehicle owner’s warranty claim will not be processed and paid prior to this date, please be sure to complete a form and provide it to a California owner.

Install the Authorized Modifications Label after the repairs have been completed. Using a permanent marker, fill out the label and affix it to the location under the hood as indicated.

Form booklets and Authorization Labels can be ordered from the MDC (Booklet material number 00410-92007, Label material number 00451-00001-LBL).

The diagram shows the underside of a red car hood. A red arrow points to a specific location where a label should be affixed. Below the hood, the label is shown with numbered callouts 1 through 7 pointing to specific fields.

**TOYOTA MOTOR CORPORATION
AUTHORIZED MODIFICATIONS**
THE FOLLOWING MODIFICATIONS HAVE BEEN MADE:

1- THESE MODIFICATIONS HAVE BEEN APPROVED AS APPROPRIATE BY EPA AND CARB

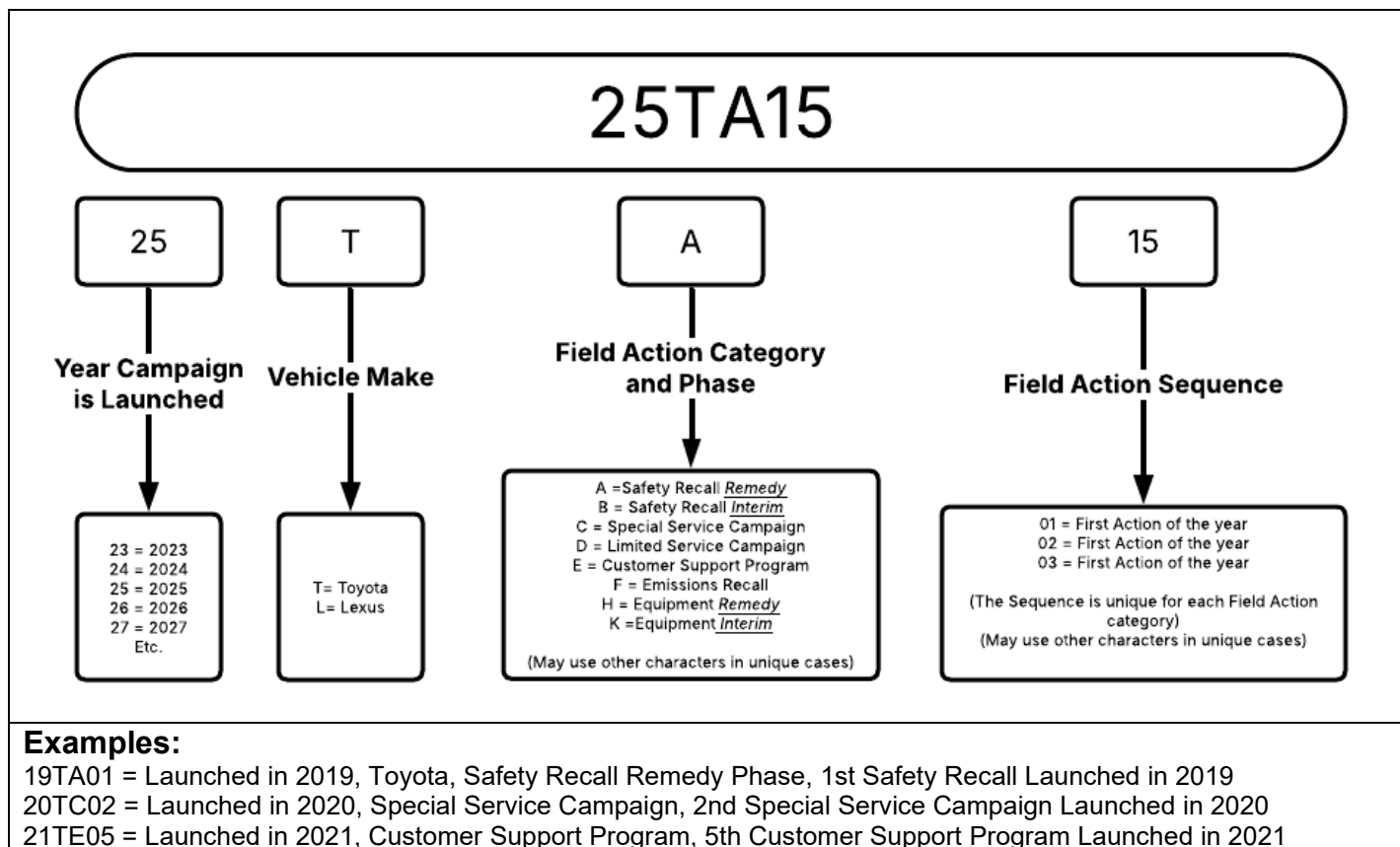
2- DEALER CODE: 3- DATE: 4- CHANGE AUTHORITY:

1-4	"Remedy for (Campaign Designation) "	6	Date Completed
5	Dealer Code	7	Campaign Designation

◀ VERIFY REPAIR QUALITY ▶

- Confirm the vehicle is operating as normal.
- Confirm no coolant leaks or coolant remaining anywhere in the engine compartment.
- If you have any questions regarding this update, please contact your regional representative.

1. CAMPAIGN DESIGNATION DECODER



2. CAMPAIGN PARTS DISPOSAL

As required by Federal Regulations, please make sure all campaign parts (original parts) removed from the vehicle are disposed of in a manner in which they will not be reused, **unless requested for parts recovery return.**