

**April 6, 2020**

Version 4

**Product Update: Clarity Fuel Cell Stack Replacement**

Supersedes 19-006, dated June 4, 2019, see REVISION SUMMARY

**AFFECTED VEHICLES**

| Year    | Model             | Trim | VIN Range                                |
|---------|-------------------|------|------------------------------------------|
| 2017-18 | Clarity Fuel Cell | ALL  | Check the iN VIN status for eligibility. |

**⚠ WARNING**

Failure to properly vent the hydrogen tanks and fuel lines prior to the fuel cell stack replacement can result in hydrogen gas leaks.

Hydrogen gas is flammable and highly explosive. You can be seriously injured or killed if the leaking hydrogen gas is ignited.

Turn off the fuel cell system, and keep heat, sparks, and flames away.

Always follow the precautions for the fuel cell system listed in the service information.

The power cables carry high voltage when the fuel cell system is energized. To avoid serious injury from electrical shock, do not turn on the system with the power cables disconnected.

**REVISION SUMMARY**

- This bulletin has been extensively revised, American Honda recommends reviewing the entire bulletin.

**BACKGROUND**

Water improperly discharged inside the fuel cell (FC) stack mixes with hydrogen and oxygen, generating hydrogen peroxide. The hydrogen peroxide/water combination concentrates in one area, accelerating the deterioration of the electrolyte membrane in the fuel cell. This deterioration can reduce fuel cell output.

There are three similar bulletins for the 2017-18 Clarity Fuel Cell:

19-006, *Product Update: Clarity Fuel Cell Stack Replacement*

19-050, *Safety Recall: 2017-18 Fuel Cell Clarity: FC Electric Water Pump*

19-054, *Safety Recall: 2017-18 Fuel Cell Clarity: FC Electric Water Pump and Fuel Cell Stack / Product Update: 2017-18 Fuel Cell Clarity Fuel Cell Stack Replacement*

Do an iN VIN status inquiry, and follow the repair procedure in the indicated bulletin.

**CUSTOMER INFORMATION:** The information in this bulletin is intended for use only by skilled technicians who have the proper tools, equipment, and training to correctly and safely maintain your vehicle. These procedures should not be attempted by "do-it-yourselfers," and you should not assume this bulletin applies to your vehicle, or that your vehicle has the condition described. To determine whether this information applies, contact an authorized Honda automobile dealer.

## CUSTOMER NOTIFICATION

Automobile Customer Service will notify lessees of affected vehicles and arrange an appointment with their dealer.

The fuel cell stack and stack kit are controlled parts and can only be ordered with an eligible VIN once this appointment has been made. Before ordering a fuel cell stack and stack kit, do an iN VIN status inquiry to make sure the vehicle needs a fuel cell stack replacement.

## CORRECTIVE ACTION

Replace the FC stack and FC ion exchanger filter.

### NOTE

AHM will determine if your dealer will receive a new FC stack or will use a donor vehicle.

Place the order for all required parts as usual. If a donor vehicle is going to be used, the stack order will be canceled by the parts department. Then, your DPSM will contact your dealership to let you know which vehicle will be used for a donor.

**There is a separate REPAIR PROCEDURE, WARRANTY CLAIM INFORMATION, and PARTS INFORMATION for when you use a new FC stack or a donor FC stack. Make sure you use the applicable information, or your claim may be debited.**

## PARTS INFORMATION (NEW FC STACK)

AHM will determine if your dealer will receive a new FC stack or will use FC stack from a donor vehicle.

Place the order for all required parts as usual. If a donor vehicle is going to be used, the stack order will be canceled by the Parts department. Then, your DPSM will contact your dealership to let you know which vehicle will be used for a donor.

### NOTE

**Information for warranty:** Use the parts information below only if a **brand new FC stack** was installed. Go to PARTS INFORMATION (Donor FC Stack) if a donor FC stack was installed.

| Part Name                                                             | Part Number   | Quantity |
|-----------------------------------------------------------------------|---------------|----------|
| Fuel Cell Stack*                                                      | 3A100-5WM-A30 | 1        |
| Stack Kit*                                                            | 063A0-5WM-305 | 1        |
| Ion Filter                                                            | 3H450-5WM-A01 | 1        |
| Honda Genuine Fuel Cell Insulating Fluid - 50% Prediluted Formulation | OL999-9014    | 2        |

\*These controlled parts require the VIN of an affected vehicle to place an order.

## WARRANTY CLAIM INFORMATION (NEW FC STACK)

| Operation Number | Description                                                  | Flat Rate Time | Defect Code | Symptom Code | Template ID | Failed Part Number |
|------------------|--------------------------------------------------------------|----------------|-------------|--------------|-------------|--------------------|
| 3101GS           | Replace the FC stack and ion filter ( <b>new FC stack</b> ). | 13.4 hr        | 6CJ00       | M3S00        | A19006A     | 3A100-5WM-A30      |

Skill Level: Fuel Cell Certified Technician

### NOTE

Make sure you indicate the VIN, mileage, and date on the replaced part and its box.

## PARTS INFORMATION (DONOR FC STACK)

AHM will determine if your dealer will receive a new FC stack or will use FC stack from a donor vehicle.

Place the order for all required parts as usual. If a donor vehicle is going to be used, the stack order will be canceled by the Parts department. Then, your DPSM will contact your dealership to let you know which vehicle will be used for a donor.

### NOTE

**Information for warranty:** Use the parts information below only if a **donor FC stack** was installed. Go to PARTS INFORMATION (New FC Stack) if a brand new FC stack was installed.

| Part Name                                                                                                       | Part Number   | Quantity |
|-----------------------------------------------------------------------------------------------------------------|---------------|----------|
| Fuel Cell Stack* (Use this part number for parts ordering purposes only. You may be told to use a donor stack.) | 3A100-5WM-A30 | 1        |

If a donor FC stack was installed, follow the steps listed to submit your claim.

- Look up the current dealer net price for a new FC stack (3A100-5WM-A30).
- Determine your dealer's part replacement/handling markup method (below) to calculate your markup charge:
  - Normal handling mark-up (40%)
  - Warranty at Retail
  - MSRPExamples: (Dealer Net for FC stack - **\$22,307.91**)
  - Example 1 (40% parts markup): **\$8,923.16** to be entered in the O1 sublet (40% of **\$22,307.91**)
  - Example 2 (71.23% parts markup): **\$15,889.92** to be entered in the O1 sublet (71.23% of **\$22,307.91**)
  - Example 3 (MSRP): **\$8,829.69** to be entered in the O1 sublet (**\$31,137.60** MSRP - **\$22,307.91** Dealer Net)
- Select **O1** from the **Sublet Code** drop-down.
- Enter **FC STACK PARTS MARKUP** under **Work Description**.
- Enter the RO number under **Invoice No.**
- Enter the calculated part handling markup in the **Sublet Amount** field.

| Sublet Information |                       |             |             |               |
|--------------------|-----------------------|-------------|-------------|---------------|
| Sublet Code        | Work Description      | Invoice No. | Rental Days | Sublet Amount |
| O1                 | FC STACK PARTS MARKUP | R.O. #      |             | \$XXXX.00     |
| << SELECT >>       |                       |             |             |               |

[Upload files](#)

File Attachments

|                                                                       |               |   |
|-----------------------------------------------------------------------|---------------|---|
| Stack Kit*                                                            | 063A0-5WM-305 | 1 |
| Ion Filter                                                            | 3H450-5WM-A01 | 1 |
| Honda Genuine Fuel Cell Insulating Fluid - 50% Prediluted Formulation | OL999-9014    | 2 |

\*These controlled parts require the VIN of an affected vehicle to place an order.

## WARRANTY CLAIM INFORMATION (DONOR FC STACK)

**Important:** When removing the FC stack from the donor vehicle, the technician was required to write down the VIN and FC stack serial number of the donor vehicle on the RO. If the VIN and FC stack serial number from the donor vehicle are missing on the warranty claim, the claim will be debited.

| Operation Number | Description                                                    | Flat Rate Time | Defect Code | Symptom Code | Template ID | Failed Part Number |
|------------------|----------------------------------------------------------------|----------------|-------------|--------------|-------------|--------------------|
| 3101HJ           | Replace the FC stack and ion filter ( <b>donor FC stack</b> ). | 18.8 hr        | 6CJ00       | M3S00        | A19006B     | 3A100-5WM-A30      |

Skill Level: Fuel Cell Certified Technician

### Required Information

Enter the VIN and serial number of the donor FC stack into the claim as shown below:

**\*Failure to provide this information will result in a debit.**

| Repair Information                          |                      |                          |       |                           | <a href="#">View Flat Rate Labor Time</a> |
|---------------------------------------------|----------------------|--------------------------|-------|---------------------------|-------------------------------------------|
| Defect Code (Exclude Dash)•                 |                      | Test Code                |       | Enter donor VIN here      |                                           |
| Item                                        | Labor Operation No.• | Labor Description        | Time• |                           |                                           |
| 1                                           |                      |                          |       | <a href="#">Delete</a>    |                                           |
| 2                                           |                      |                          |       | <a href="#">Delete</a>    |                                           |
| 3                                           |                      |                          |       | <a href="#">Delete</a>    |                                           |
| Total Time                                  |                      |                          | 0.0   | <a href="#">More &gt;</a> |                                           |
| M.I.L. On <input type="button" value="NO"/> |                      | Diagnostic Trouble Codes |       |                           |                                           |

| Parts Information         |                       |                                |            |            |             |                        |
|---------------------------|-----------------------|--------------------------------|------------|------------|-------------|------------------------|
| Failed Part No.•          |                       | Failed Part Description•       |            |            |             |                        |
| Replacement Serial No.    |                       | Enter donor Serial Number here |            |            |             |                        |
| Item                      | Replacement Part No.• | Quantity•                      | Unit Price | Unit Total | Description |                        |
| 1                         |                       |                                |            |            |             | <a href="#">Delete</a> |
| 2                         |                       |                                |            |            |             | <a href="#">Delete</a> |
| 3                         |                       |                                |            |            |             | <a href="#">Delete</a> |
| 4                         |                       |                                |            |            |             | <a href="#">Delete</a> |
| 5                         |                       |                                |            |            |             | <a href="#">Delete</a> |
| <a href="#">More &gt;</a> |                       |                                |            |            |             |                        |

## REQUIRED MATERIALS

| Part Name          | Part Number | Quantity |
|--------------------|-------------|----------|
| Antifreeze/Coolant | OL999-9011  | 2        |

## TOOL INFORMATION

| Part Name                                                                                                        | Part Number   | Quantity |
|------------------------------------------------------------------------------------------------------------------|---------------|----------|
| Universal Lifting Eyelet                                                                                         | 07AAK-SNAA129 | 1        |
| Oil Filter Wrench                                                                                                | 07HAA-PJ70101 | 1        |
| Transmission Hanger Bracket (This tool is not included in the required tools cabinet. Order one only if needed.) | 21232-RCT-A00 | 1        |

## REPAIR PROCEDURE (NEW FC STACK)

### NOTES

- When working on or around the fuel cell system, pay attention to the service precautions for the fuel cell system.
  - Refer to the job aid *Fuel Cell Service Equipment Kit and Portable Vent Stack* for proper use of the venting equipment.
- Replace the fuel cell stack as described in the service information. Rotate the tires during the repair.

### NOTE

Click [HERE](#) to watch a video on fuel cell stack and FC ion exchanger removal.

- Reset the maintenance minder (A1) using the i-HDS.

### NOTES

If you are unable to successfully reset the maintenance minder, turn the ignition to OFF and wait **10 minutes** after the air pump unit has stopped.

- After turning the ignition to OFF, the air pump unit will continue to operate for a minute or less (it may be longer in low temperatures) and shut off automatically. Once the air pump unit stops, wait at least **10 minutes** to start the maintenance minder reset procedure.
- To check if the air pump unit is running, go to the back of the vehicle and check the diluter (exhaust pipe outlet). You should hear and feel air coming out of it. Once you stop hearing and feeling the air, the air pump unit has stopped.

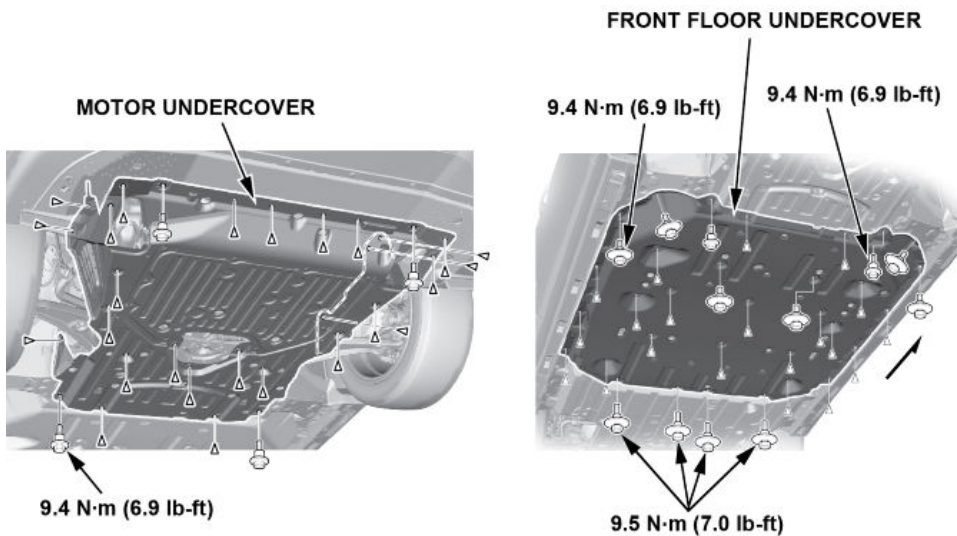
## REPAIR PROCEDURE (DONOR FC STACK)

### NOTES

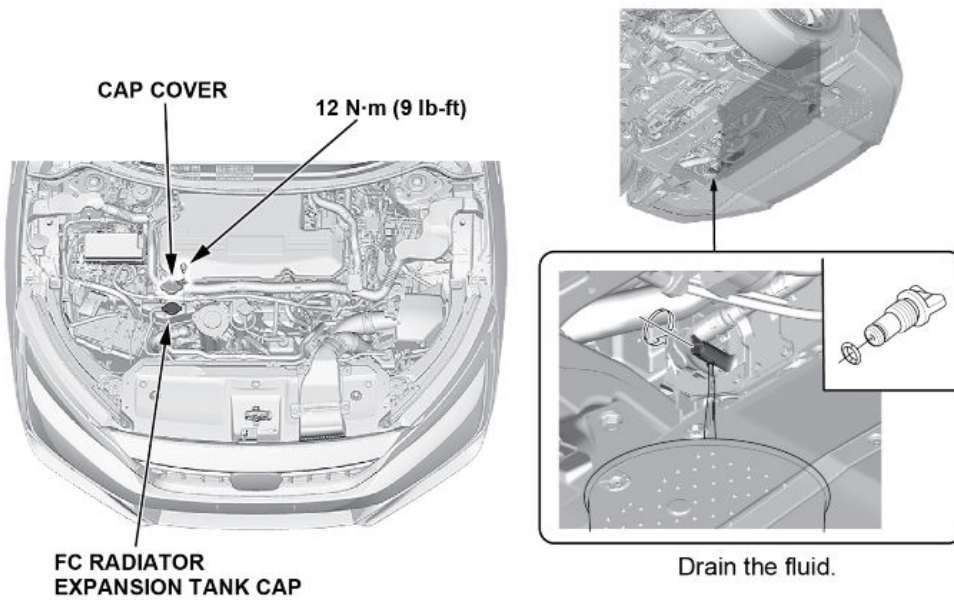
- When working on or around the fuel cell system, pay attention to the service precautions for the fuel cell system.
- Refer to the job aid *Fuel Cell Service Equipment Kit and Portable Vent Stack* for proper use of the venting equipment.

### Preparing the Vehicle Requiring an FC Stack

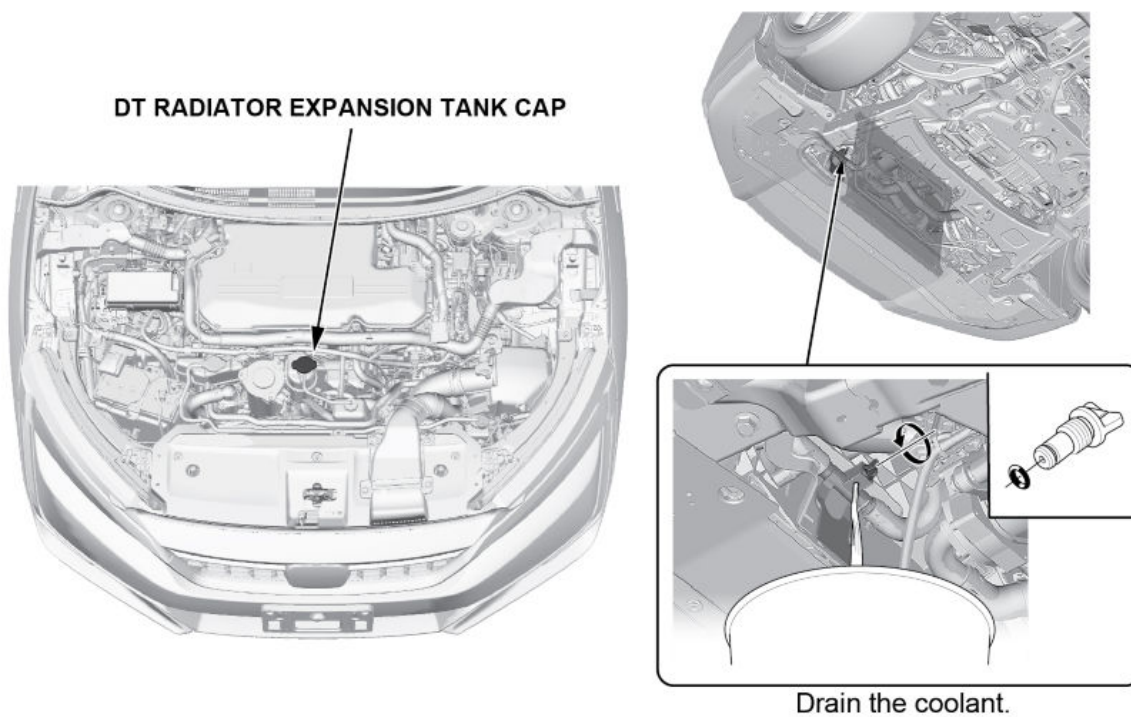
1. Vent the hydrogen to **4000 kPa** pressure to prepare for the new (donor) FC stack installation. Refer to the service information procedure, *Preparation Before Component Removal* and do the steps listed under Common Procedures and Procedure A.
2. Once the venting is complete, move the vehicle inside and onto a lift.
3. Remove both front wheels.
4. Remove the motor undercover and front floor undercover.



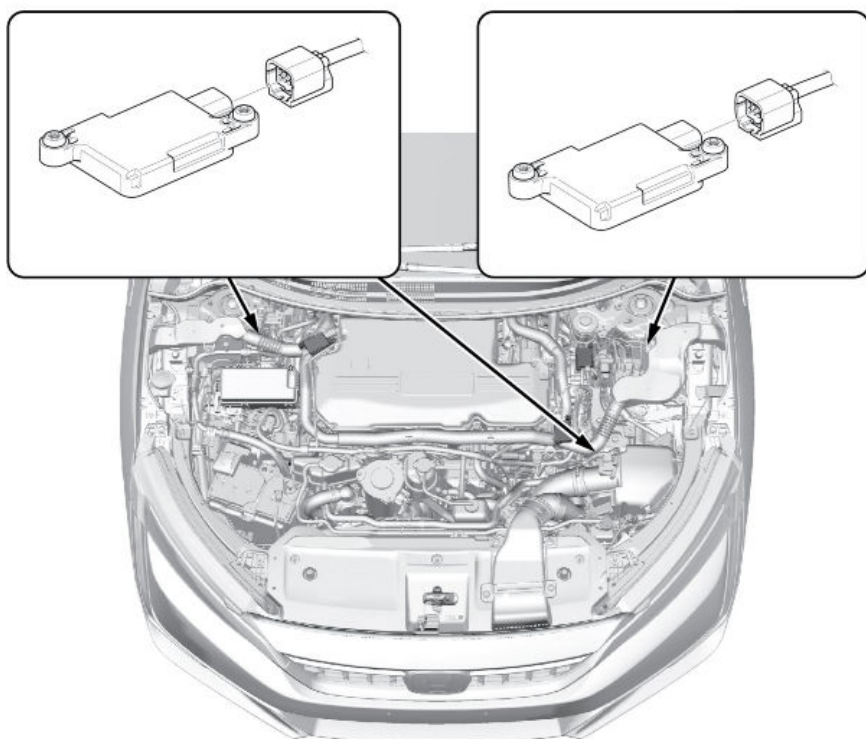
5. Remove the FC radiator expansion tank cap, and drain the FC insulating fluid.



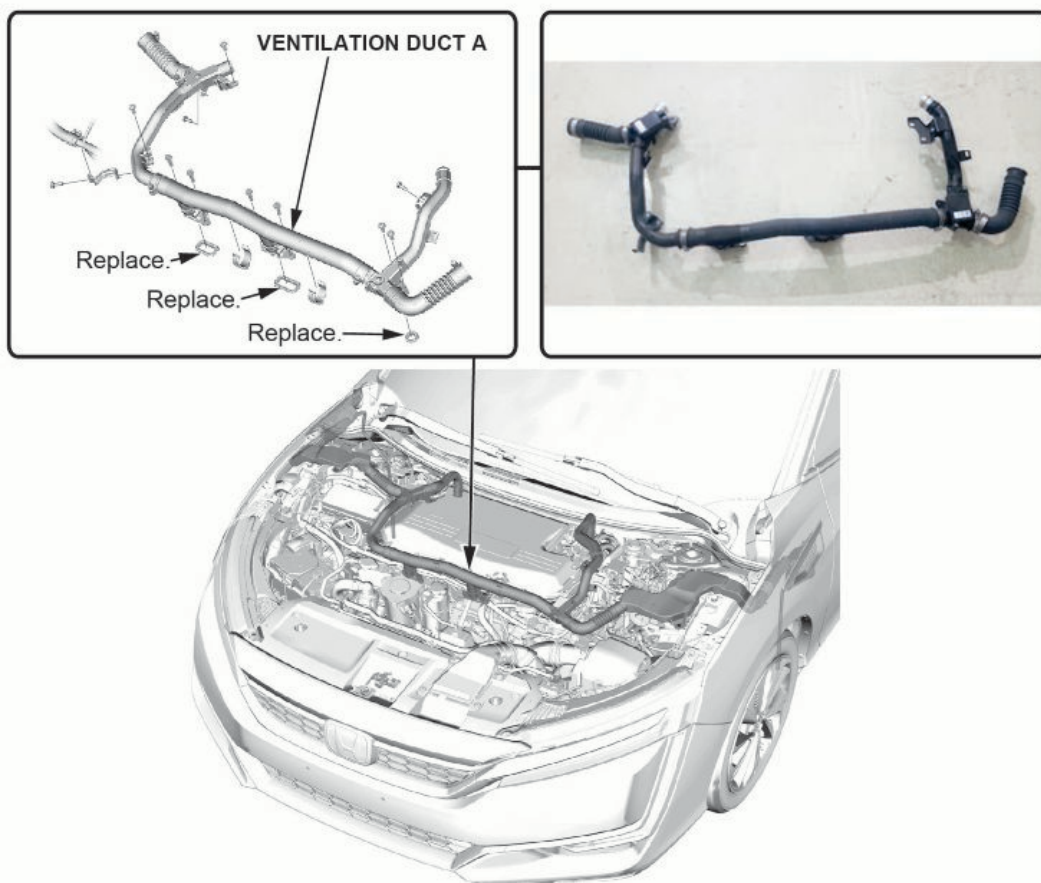
6. Remove the DT radiator expansion tank cap, and drain the DT coolant.



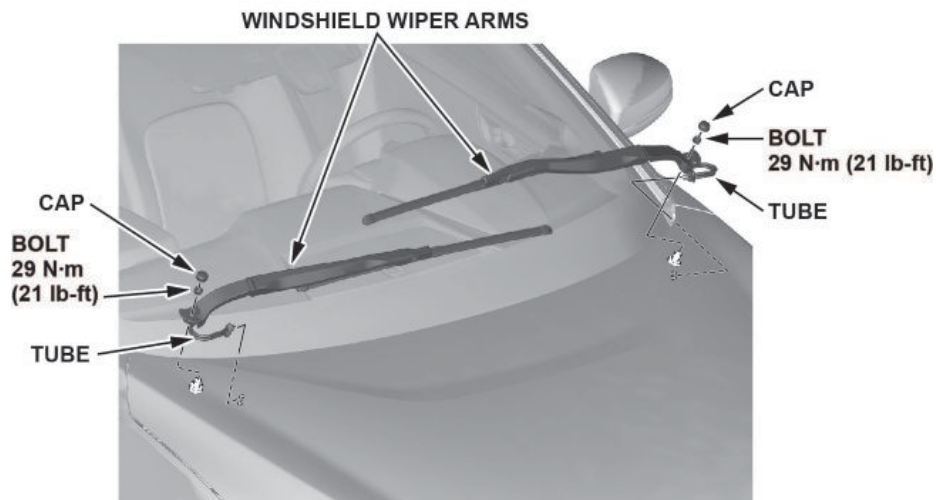
7. Disconnect both hydrogen sensor connectors. **Do not remove the sensor** from ventilation duct A.



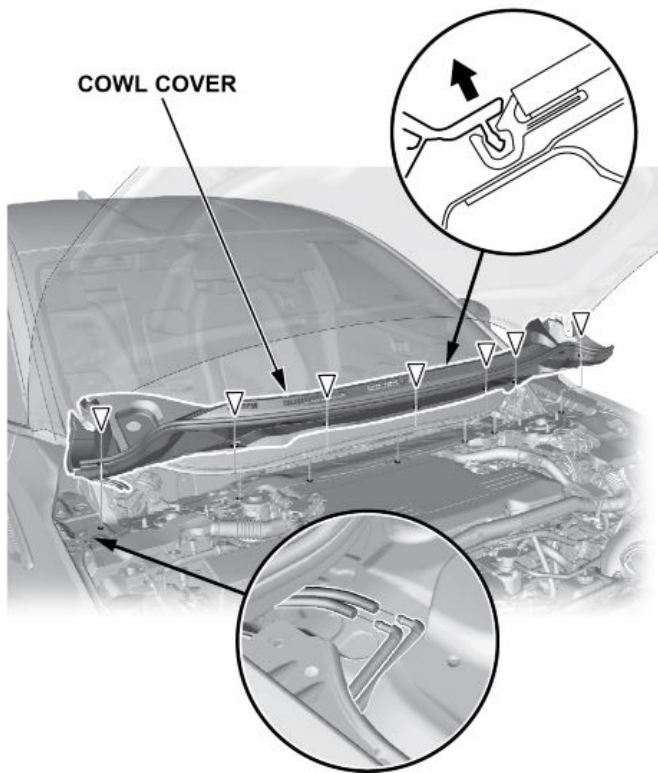
8. Remove FC ventilation duct A as an assembly as shown.



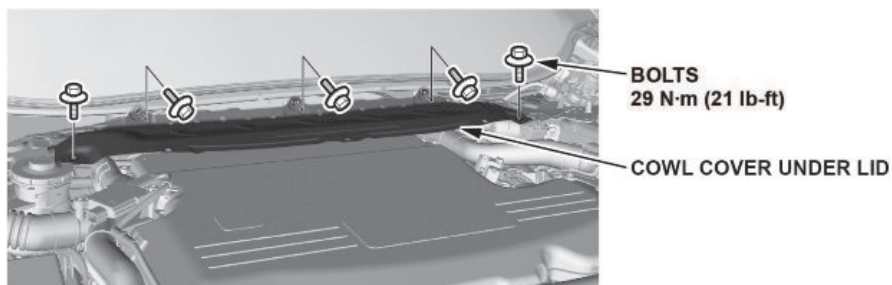
9. Remove the windshield wiper arms.



10. Remove the cowl cover.



11. Remove the cowl cover under lid.

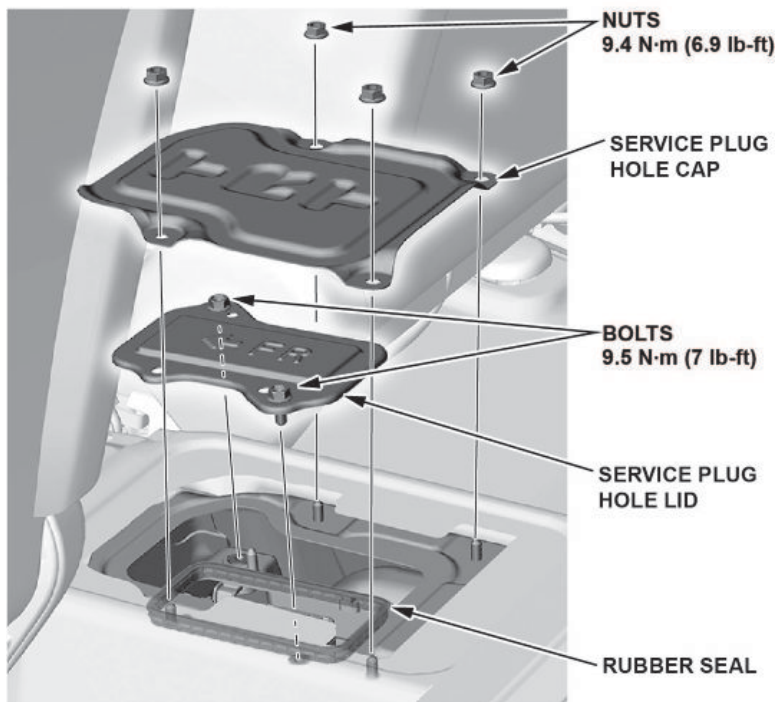


12. Remove the service plug.

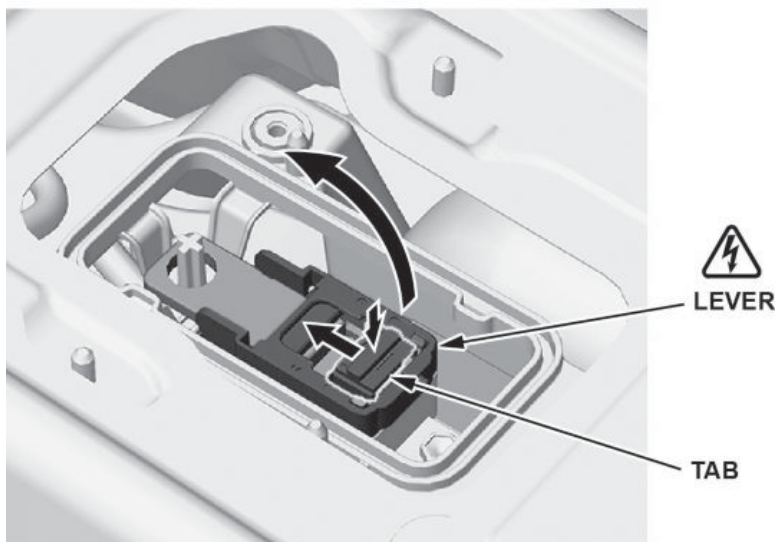
- 12.1. Pull back the carpet located under the back side of the center console, then remove the service plug hole cap and service plug hole lid.

**NOTE**

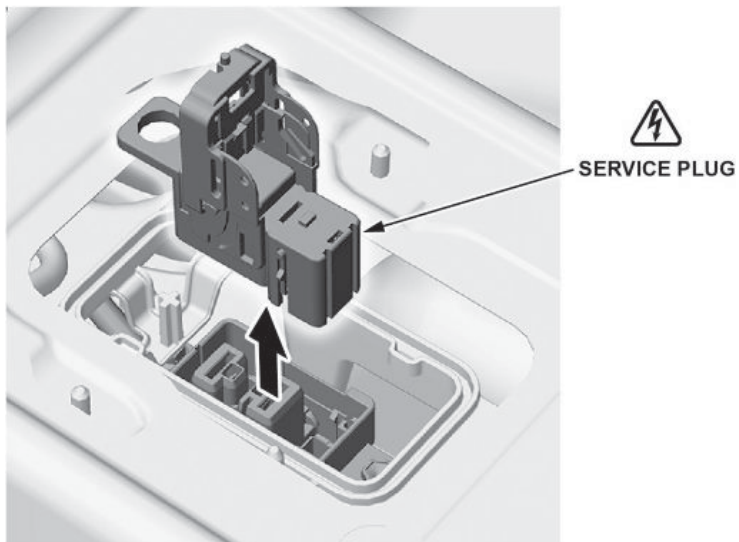
Reuse the service plug hole lid if the seal is not deformed or damaged.



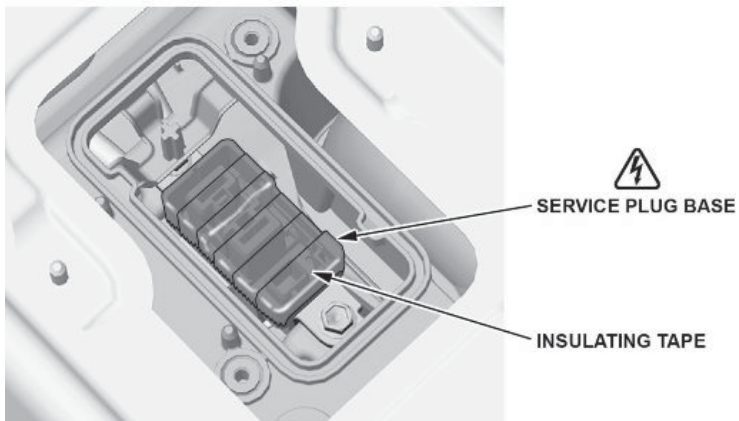
- 12.2. Raise the lever while pushing and sliding the tab in the direction of the arrow.



12.3. Remove the service plug.



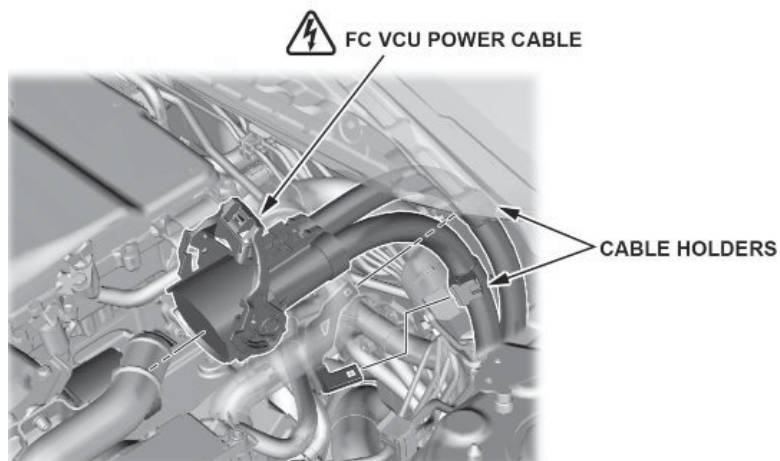
12.4. Wrap the service plug base with insulating tape.



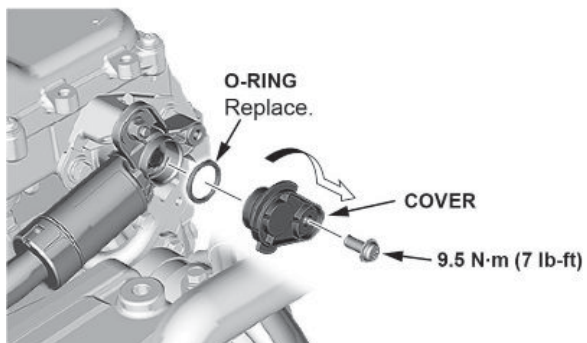
13. Disconnect the FC VCU power cable.

**NOTE**

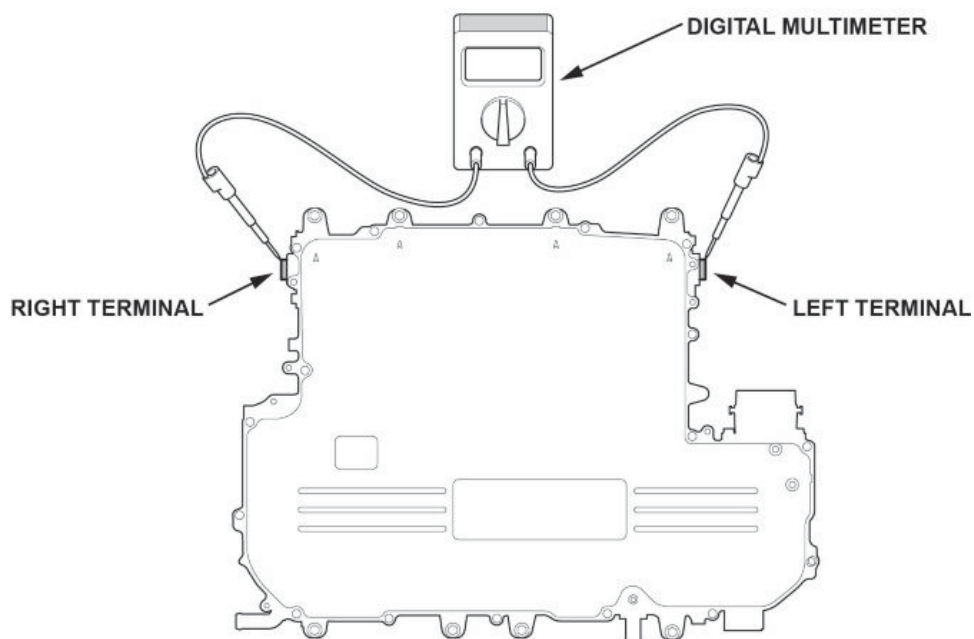
Wrap insulating tape or a clean shop towel around the connector to prevent oil, water, or dirt from entering.



14. Remove the left and right FC stack power cable cover.

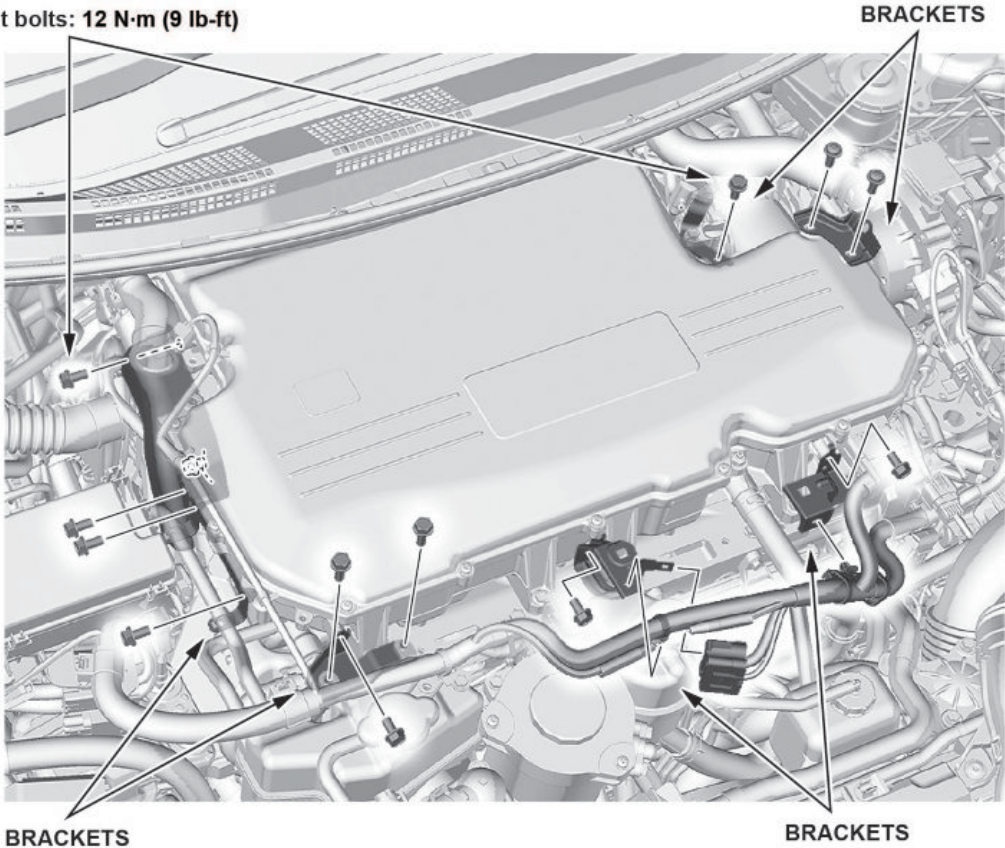


15. Measure the voltage of the FC VCU by connecting a multimeter to both the right and left terminal. Make sure to wait for the voltage to be 30-volts or less before continuing.

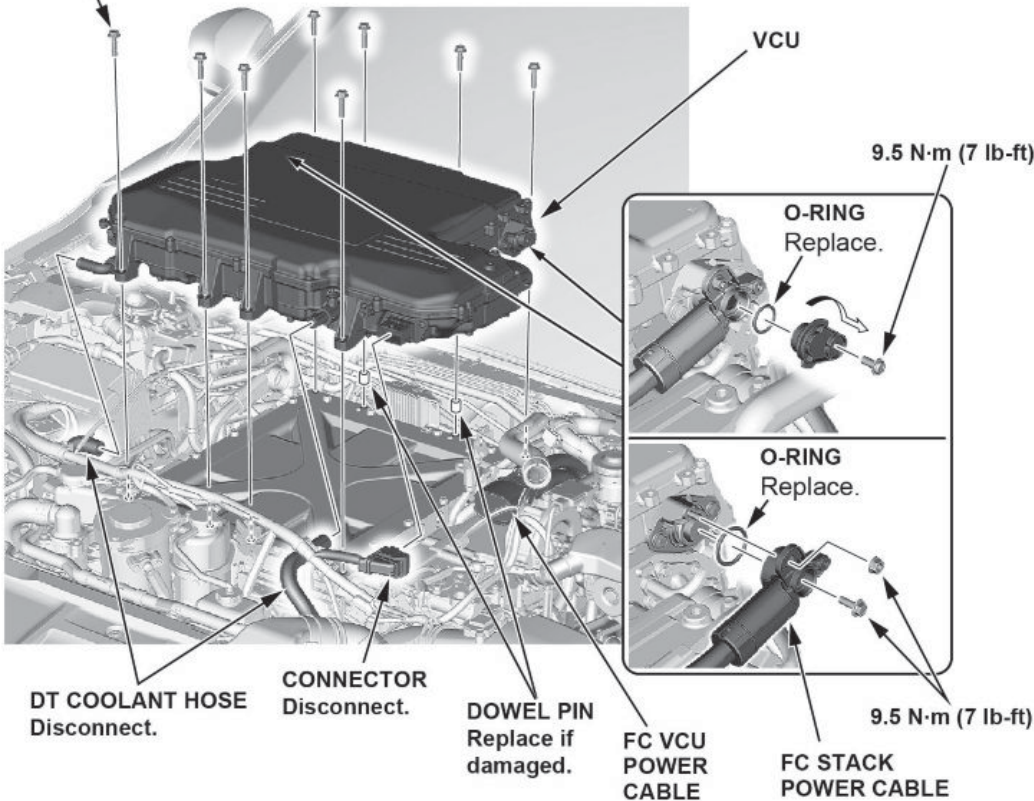


16. Remove the VCU. Refer to the service information for additional information.

All bracket bolts: 12 N·m (9 lb-ft)

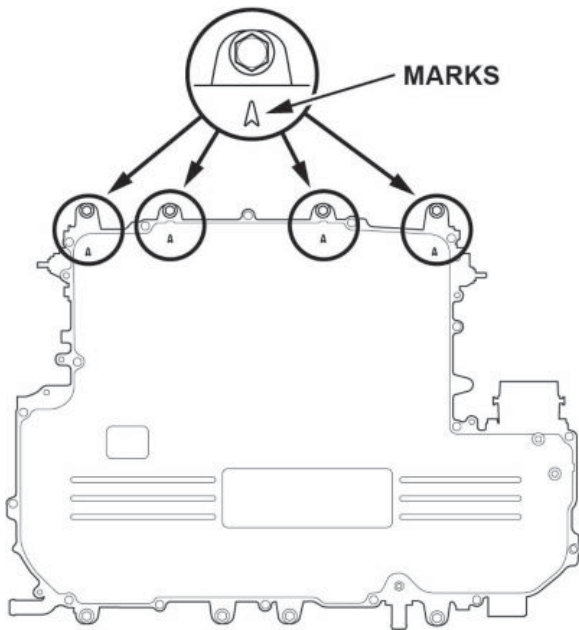


11 N·m (8 lb-ft)

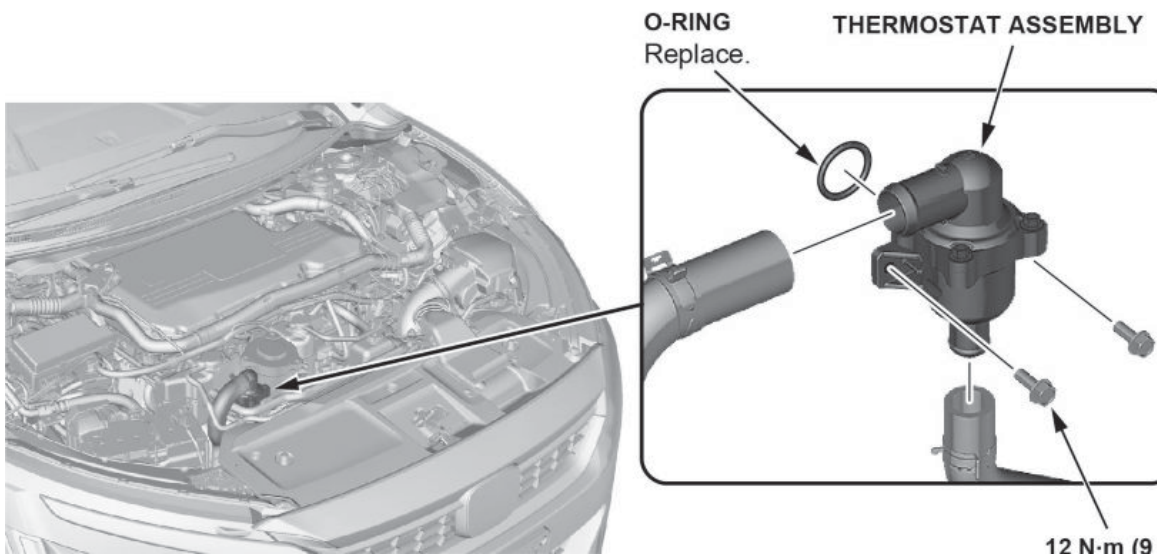


**NOTE**

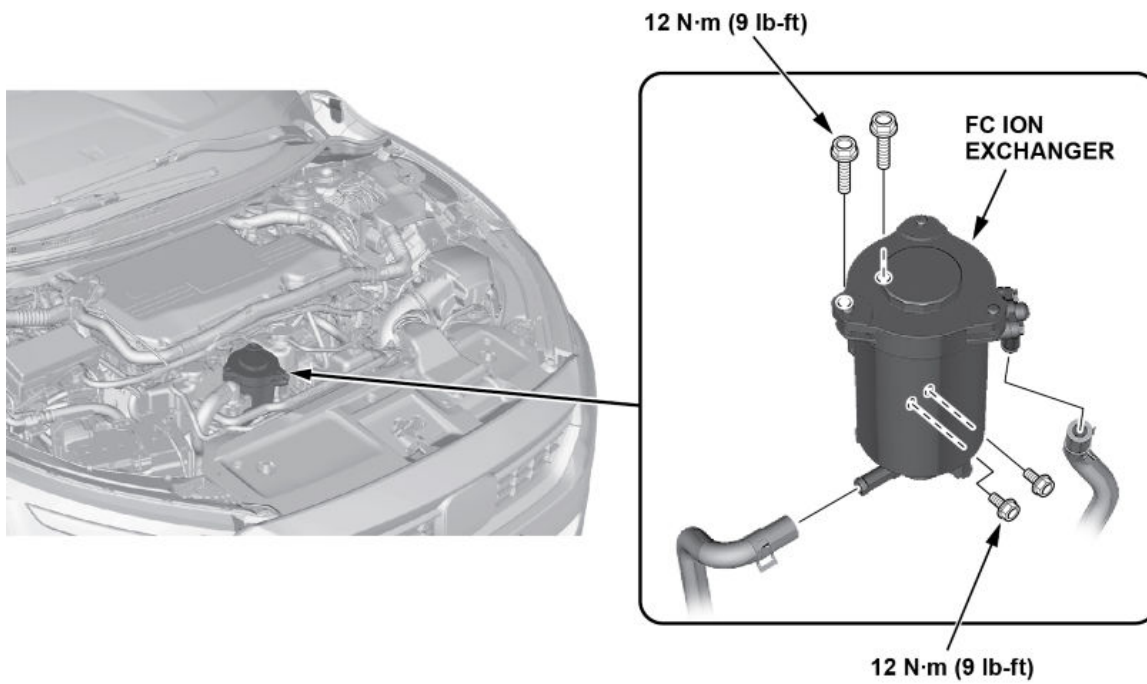
The marks located on the back of the FC VCU show which bolts to remove.



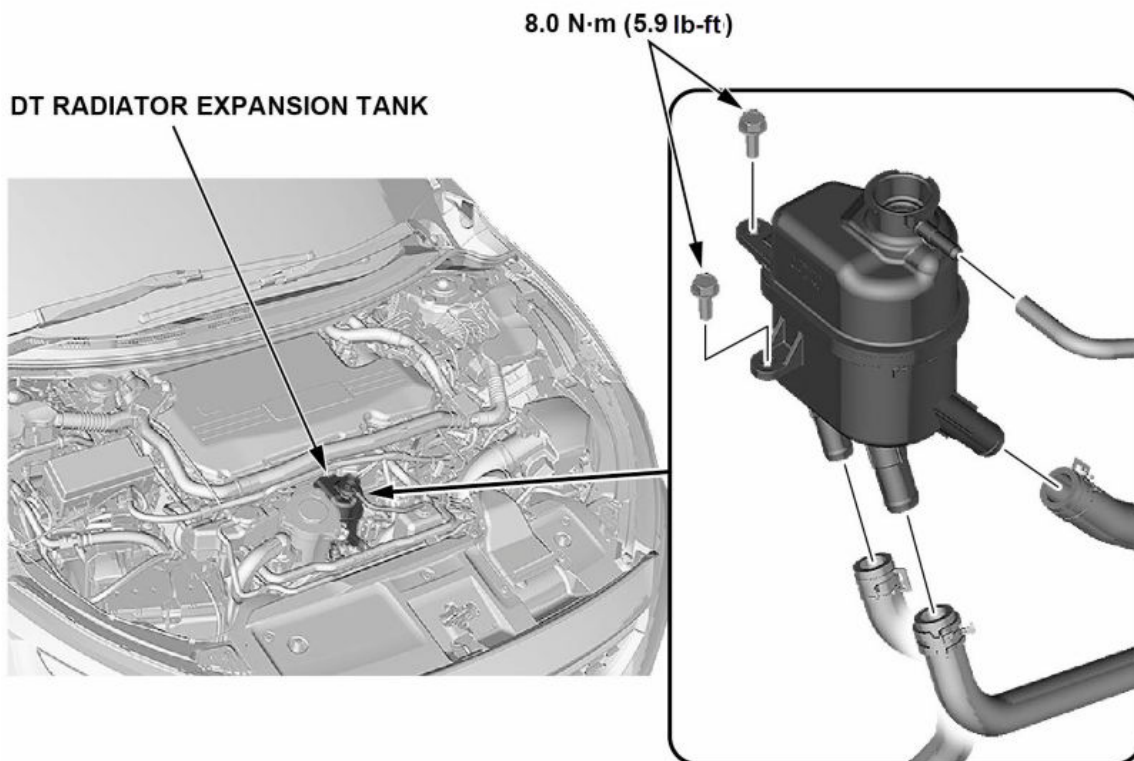
17. Remove the thermostat.



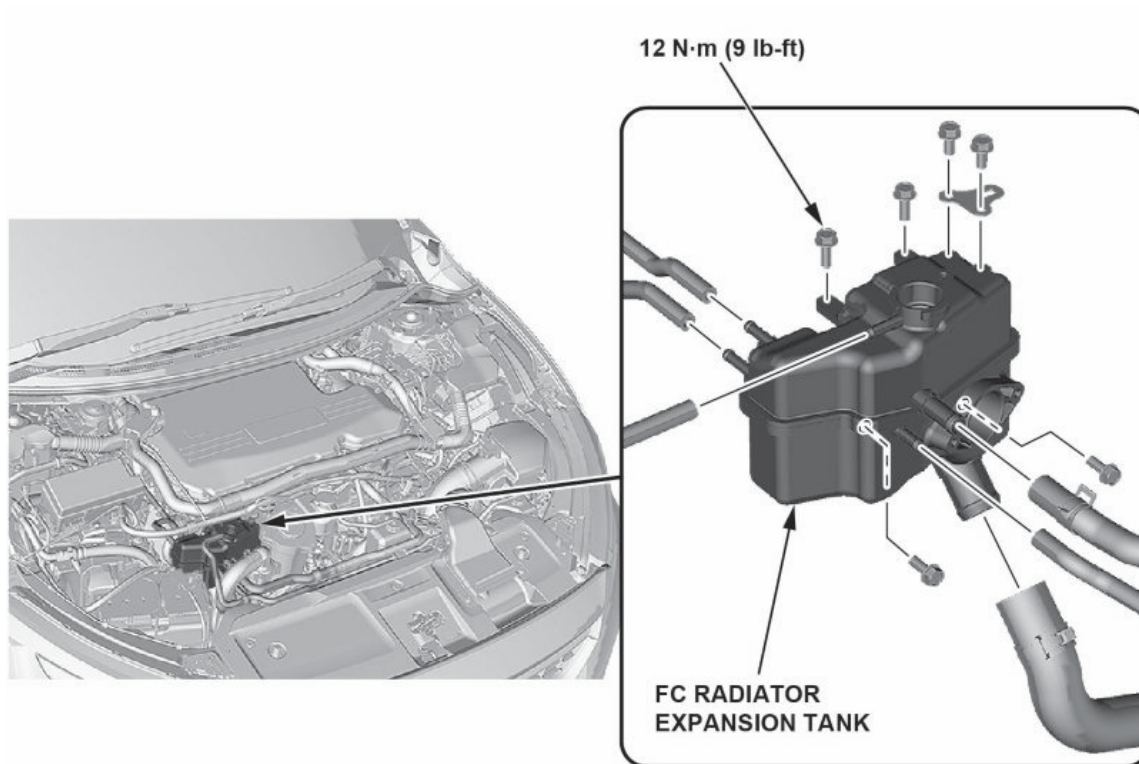
18. Remove the FC ion exchanger.



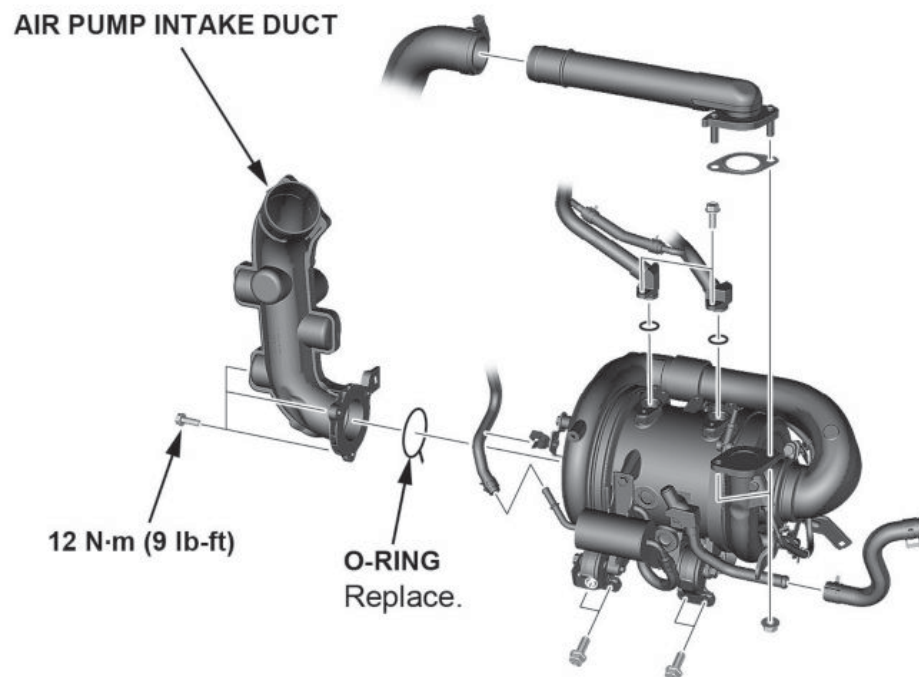
19. Remove the DT radiator expansion tank.



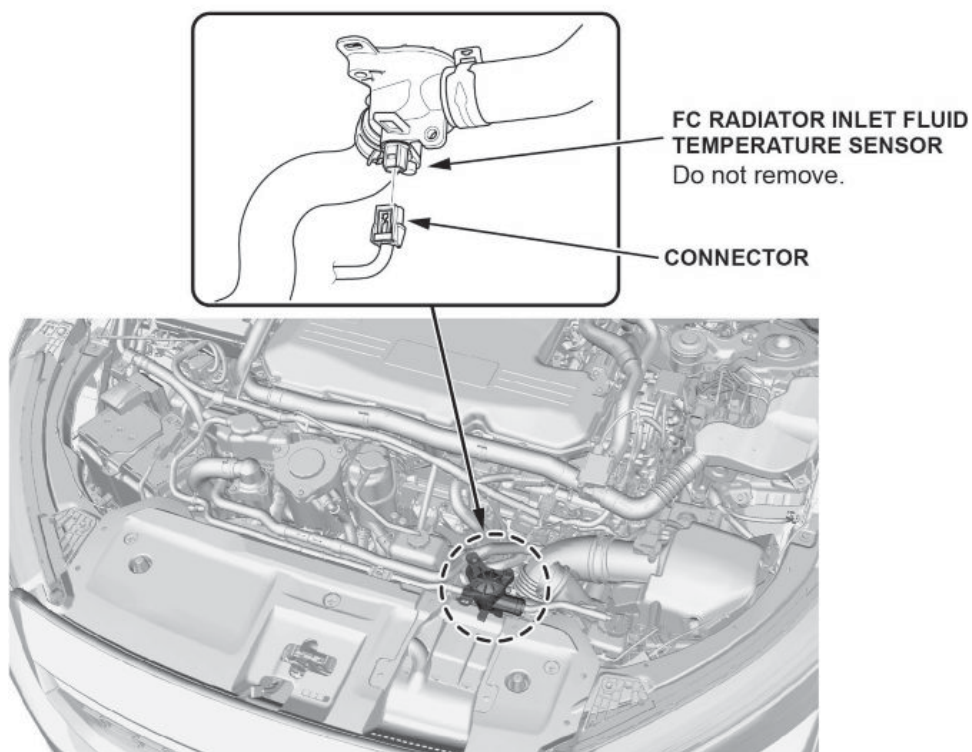
20. Remove the FC radiator expansion tank.



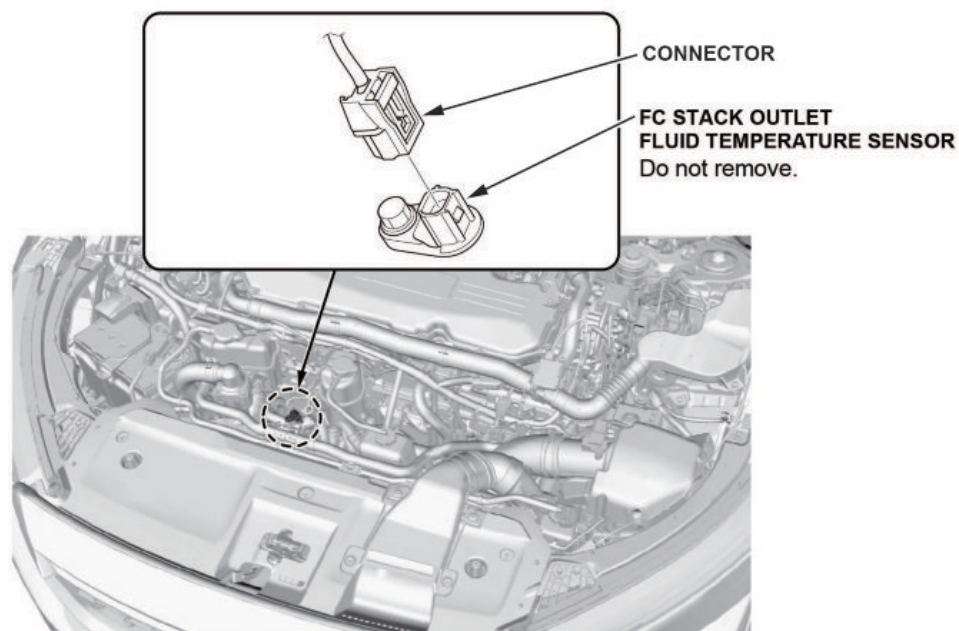
21. Remove the air pump intake duct (air cleaner duct).



22. Disconnect the FC radiator inlet fluid temperature sensor connector. **Do not remove the sensor.**



23. Disconnect the FC stack outlet fluid temperature sensor connector. **Do not remove the sensor.**



NOTE

**PIPE**

**BOLT 12 N·m (9 lb-ft)**

**BRACKET**

**BOLT 9.4 N·m (6.9 lb-ft)**

**Type A**

**② HOSE**

**HOSE**

**HOSES**

**③ HOSE**

**Type B**

**② HOSE**

**HOSES**

**③ HOSE**

**HOSE**

**① HOSE**

**BRACKET**

**BOLT 45 N·m (33 lb-ft)**

**①**

**TOP**

**②**

**TOP**

**③**

**TOP**

**BOLTS 12 N·m (9 lb-ft)**

**BRACKET**

**BRACKET**

**BOLTS 12 N·m (9 lb-ft)**

**BRACKET**

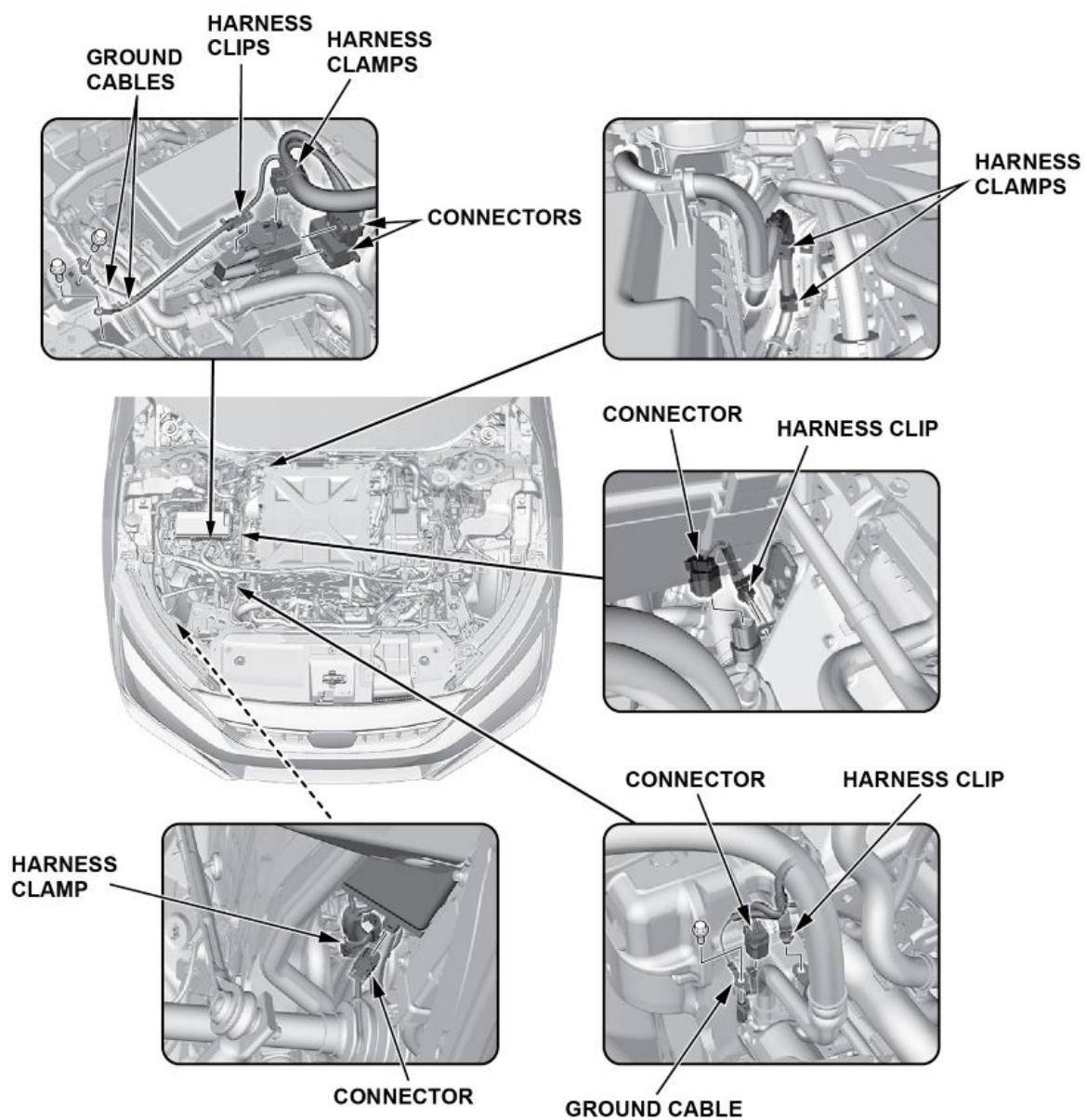
**BOLTS 12 N·m (9 lb-ft)**

**BRACKET**

**PIPES**

**NUTS 12 N·m (9 lb-ft)**

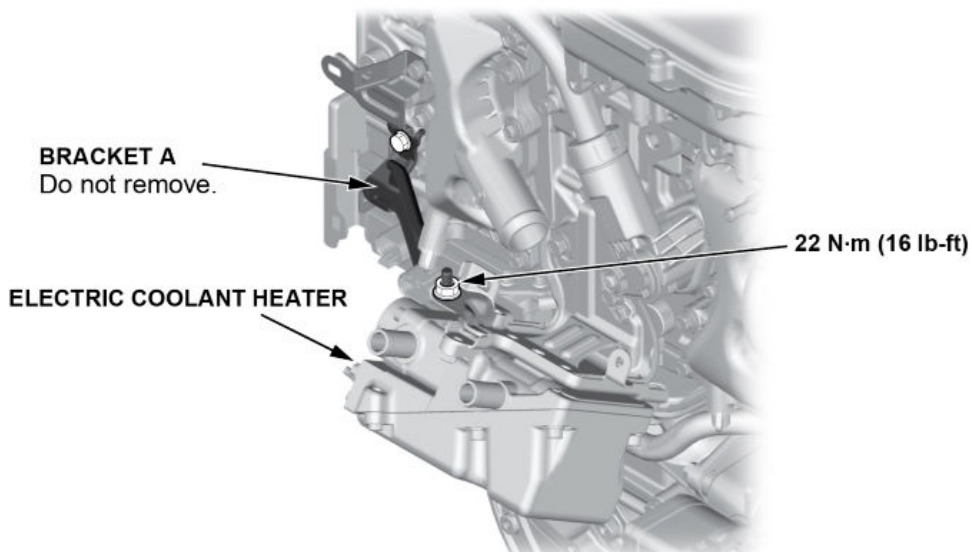
25. Disconnect the FC wire harness.



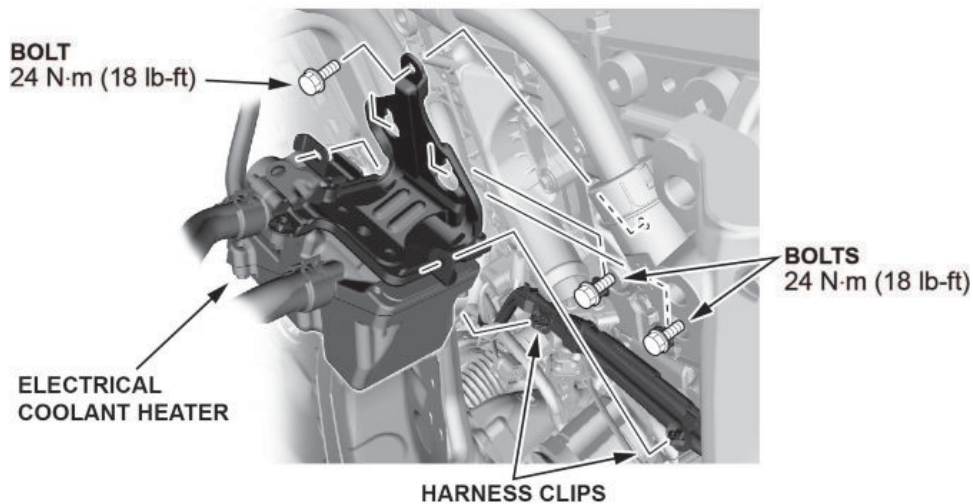
26. Remove the electric coolant heater from the FC stack, but do not remove bracket A. Once the heater is removed, place it out of the way on the frame.

**NOTE**

You do not need to remove the hoses from the heater, only the electrical connection.



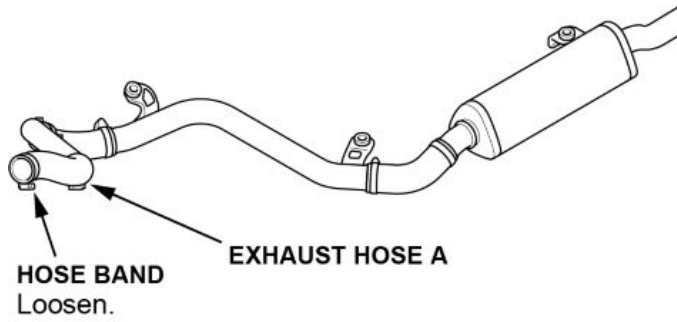
- 26.1. Remove the harness clips.



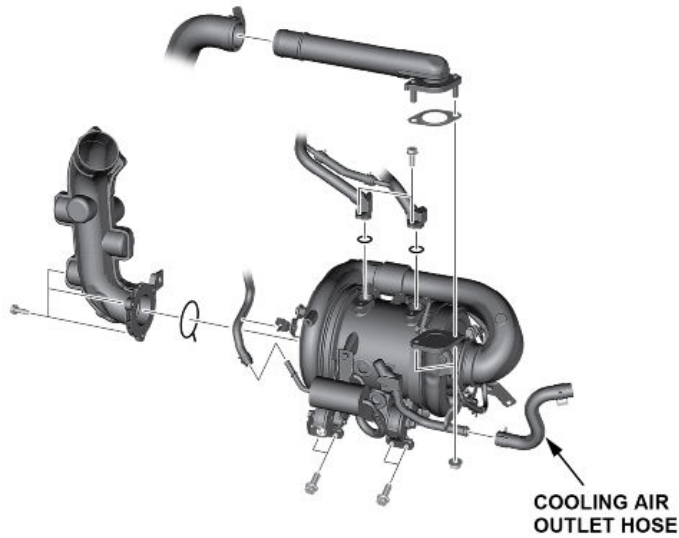
- 26.2. Remove the bolts.

- 26.3. Disconnect the harness connector from the heater.

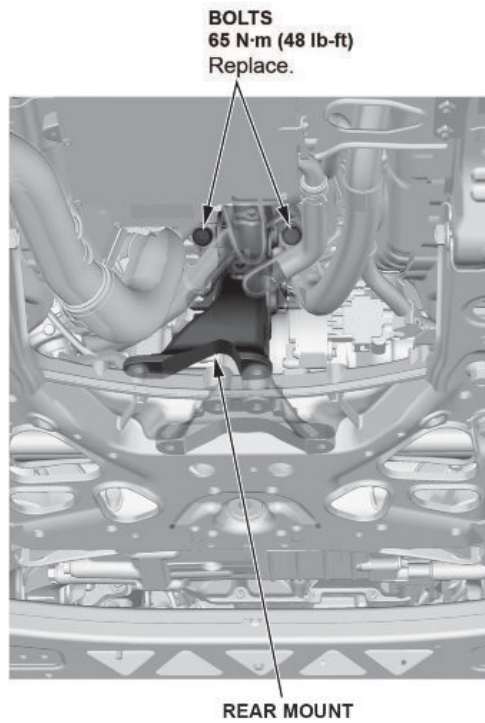
27. Loosen and disconnect, but do not remove exhaust hose A from the FC stack outlet.



28. Disconnect the cooling air outlet hose from the air pump unit.



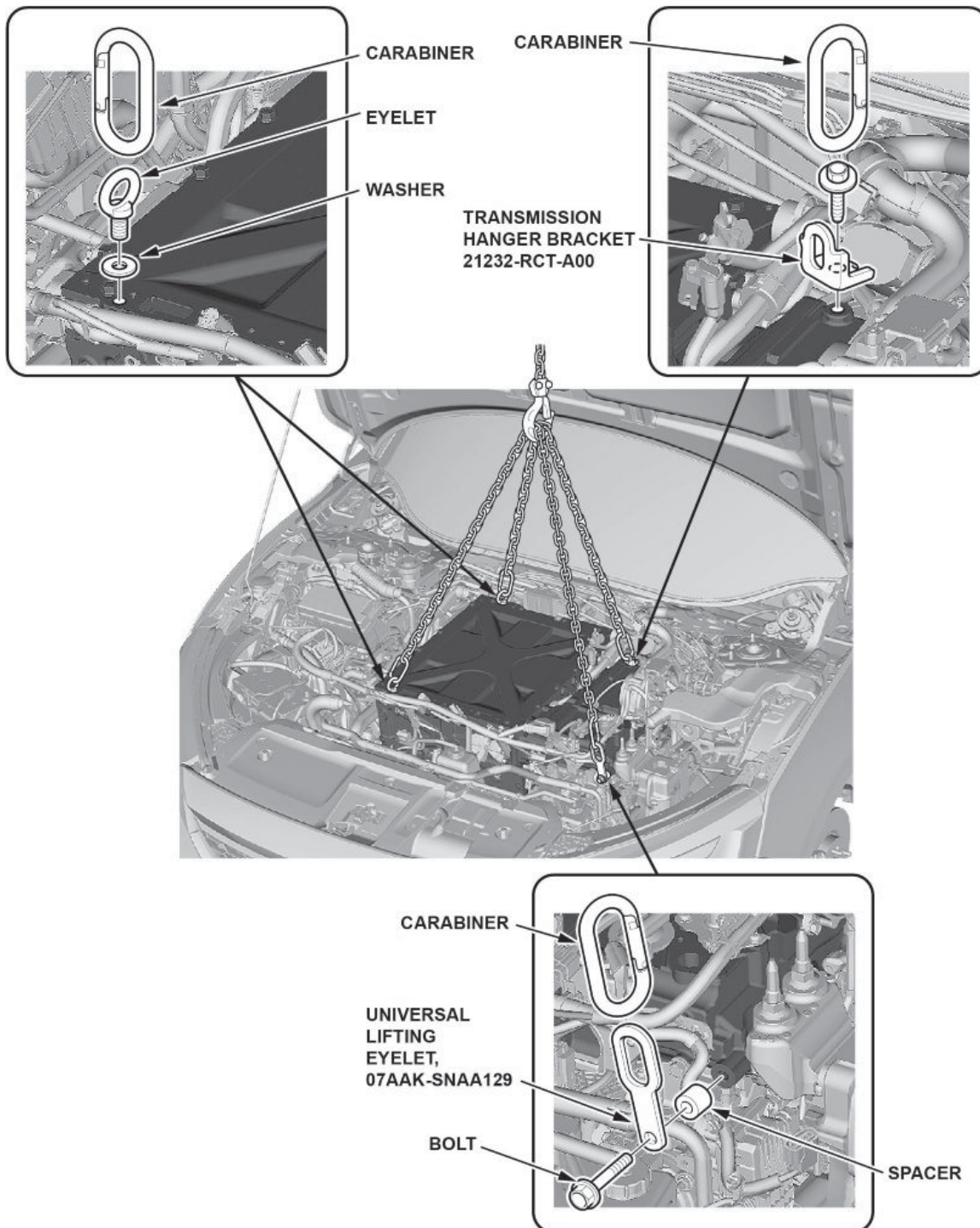
29. Remove the rear mount mounting bolts from the FC stack.



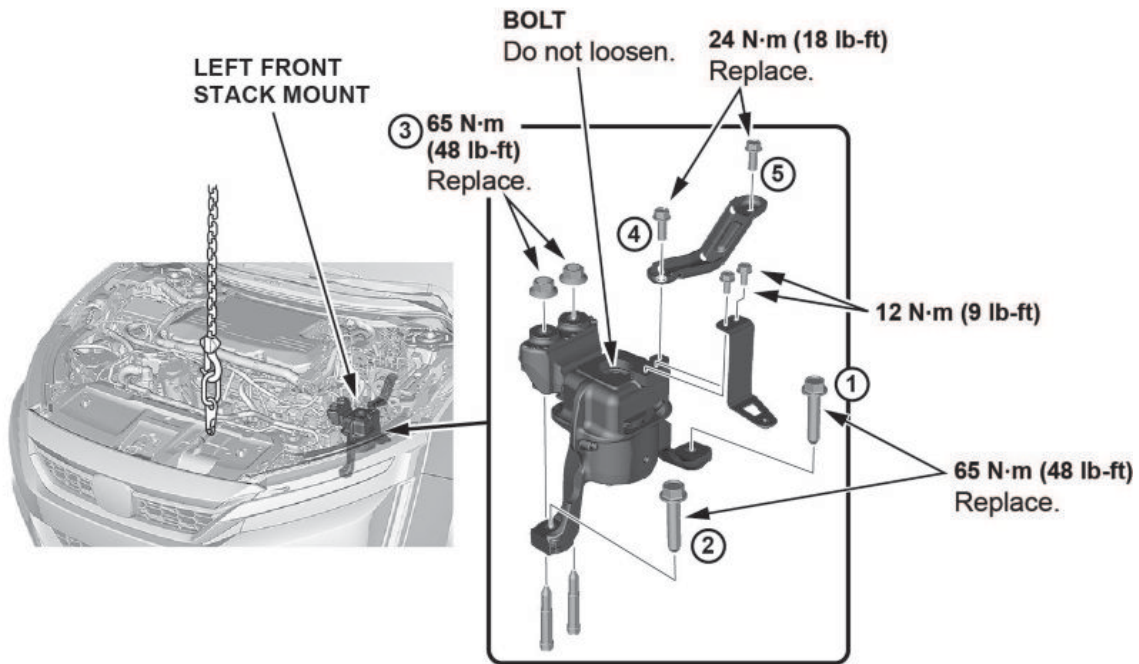
30. Install a chain hoist to the FC stack.

**NOTE**

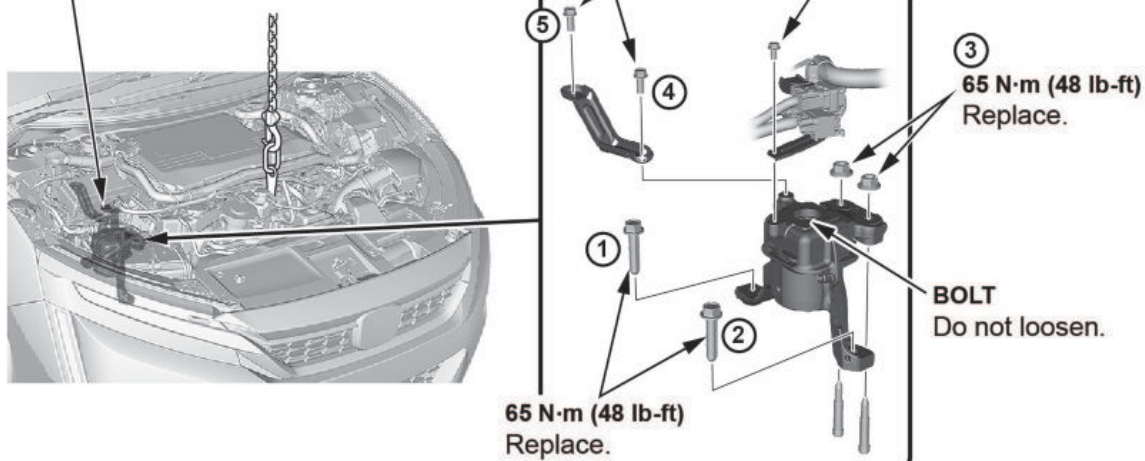
Use a commercially available carabiner, eyelet, washer, spacer, and bolt.



31. Remove the left front and right front stack mounts.



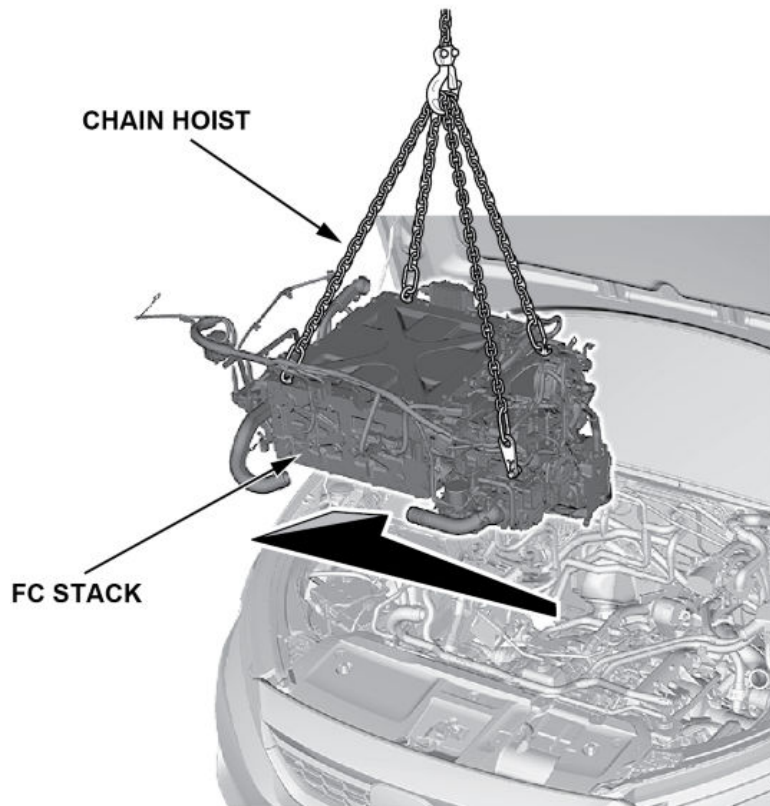
**RIGHT FRONT STACK MOUNT**



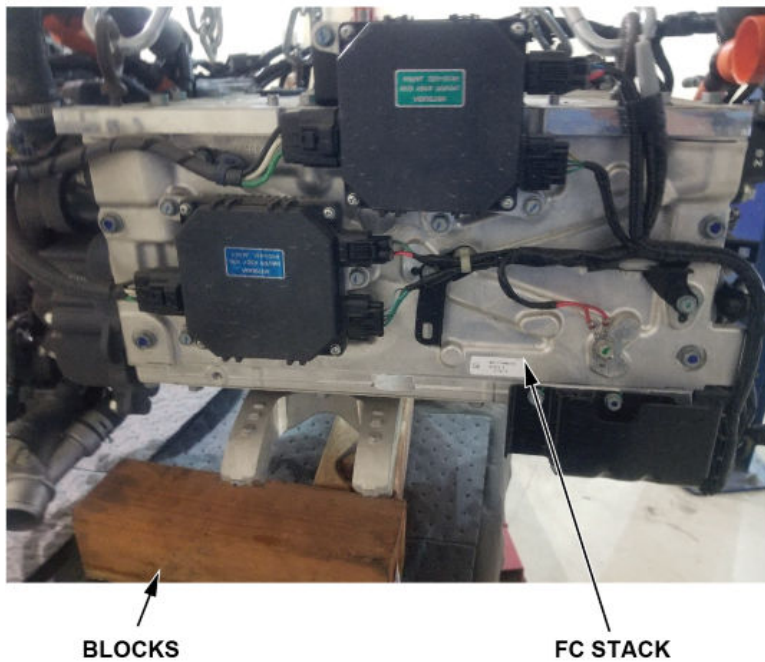
32. Remove the FC stack.

**NOTE**

Mark the FC stack with **NG** once it is removed.



33. Carefully set the FC stack on blocks to prevent damage to the components underneath.



34. Go to Removing the FC Stack from the Donor Vehicle and Installing It to the Repair Vehicle on the next page.

## Removing the FC Stack from the Donor Vehicle and Installing It to the Repair Vehicle

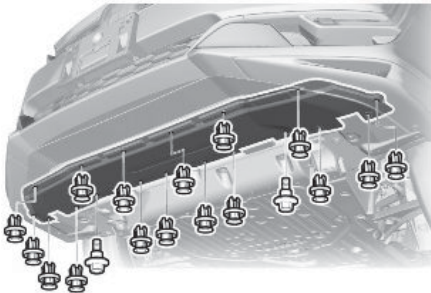
Before doing this repair, make sure the donor vehicle is operating correctly, and do an All DTC Check with the i-HDS to make sure there are no DTCs set that would affect the FC stack operation. If there are any FC stack-related DTCs set, a different donor vehicle will have to be used. Contact Tech Line for more information.

**Important: Write down the VIN and FC stack serial number of the donor vehicle on your RO. If this information is missing on the warranty claim, the claim will be debited.**

1. Vent the hydrogen to **4000 kPa** pressure to prepare for the new (donor) FC stack installation. Refer to the service information procedure, *Preparation Before Component Removal* and do the steps listed under Common Procedures and Procedure A.
2. Once the venting and purging is complete, move the vehicle inside and onto a lift.
3. Remove all four wheels.
4. Remove the front motor, motor, front floor, middle floor, and rear floor undercovers.

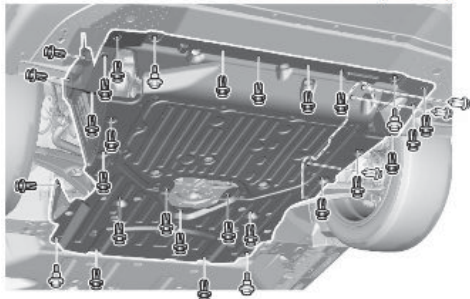
**FRONT MOTOR  
UNDERCOVER**

All bolts: 9.4 N·m (6.9 lb-ft)



**MOTOR  
UNDERCOVER**

All bolts: 9.4 N·m (6.9 lb-ft)



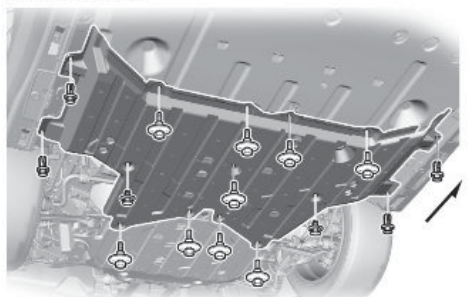
**FRONT FLOOR  
UNDERCOVER**

All bolts: 9.4 N·m (6.9 lb-ft)



**MIDDLE FLOOR  
UNDERCOVER**

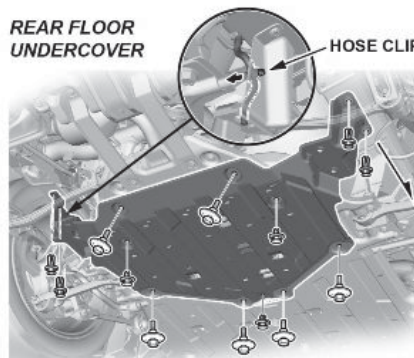
All bolts: 9.4 N·m (6.9 lb-ft)



**REAR FLOOR  
UNDERCOVER**

HOSE CLIP

All bolts: 9.4 N·m (6.9 lb-ft)

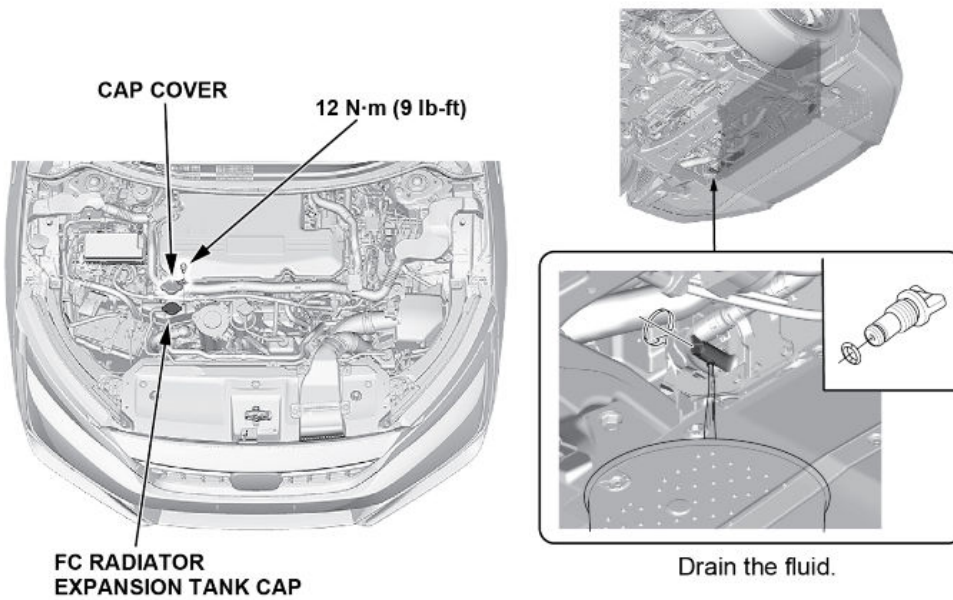


5. Make sure the parking brake is released, then disconnect the 12-volt battery.
6. Lower both the main and sub hydrogen tanks just enough to remove the valves.

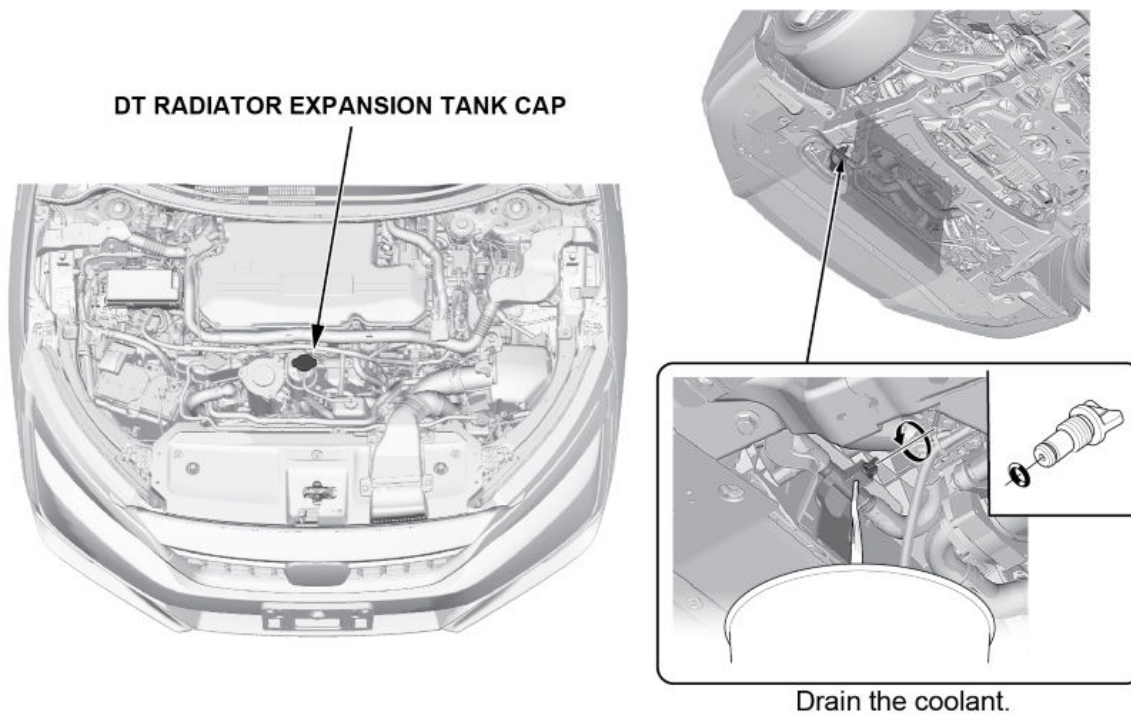
### NOTE

Refer to the job aid *Hydrogen Tank(s) Replacement and Disposal*.

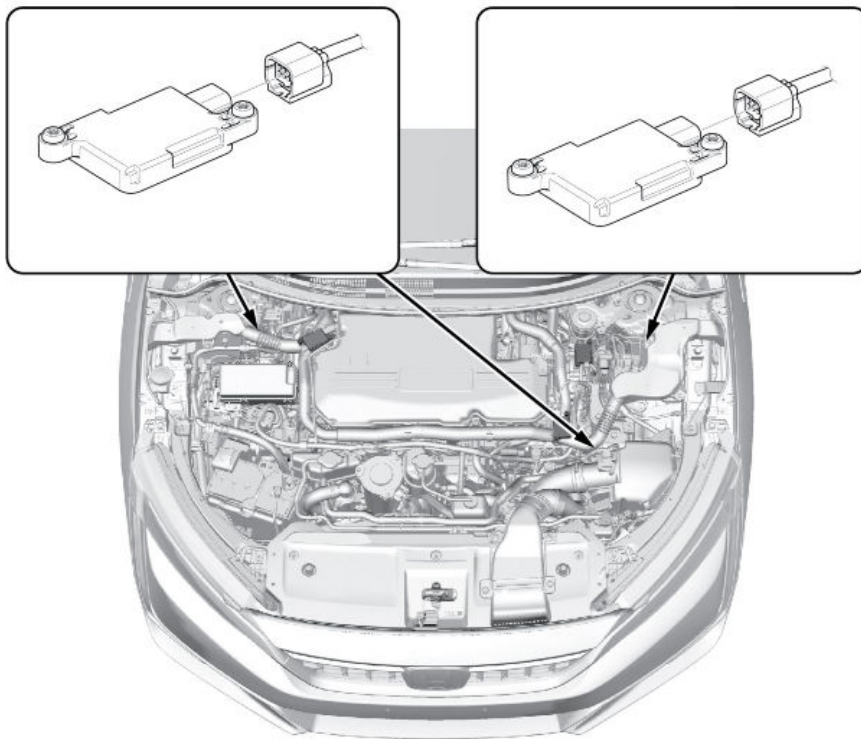
7. Mount both main and sub hydrogen tanks; you do not need to fully install it.
8. Remove the FC radiator expansion tank cap, and drain the FC insulating fluid.



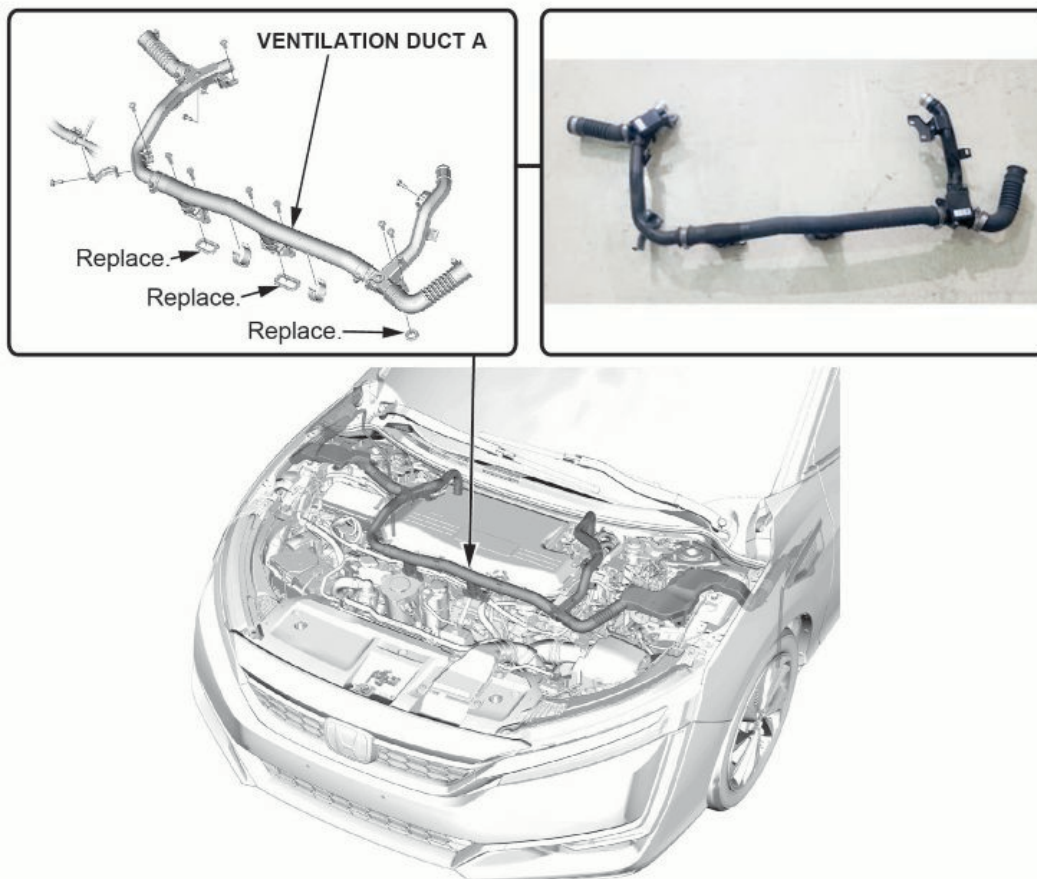
9. Remove the DT radiator expansion tank cap, and drain the DT coolant.



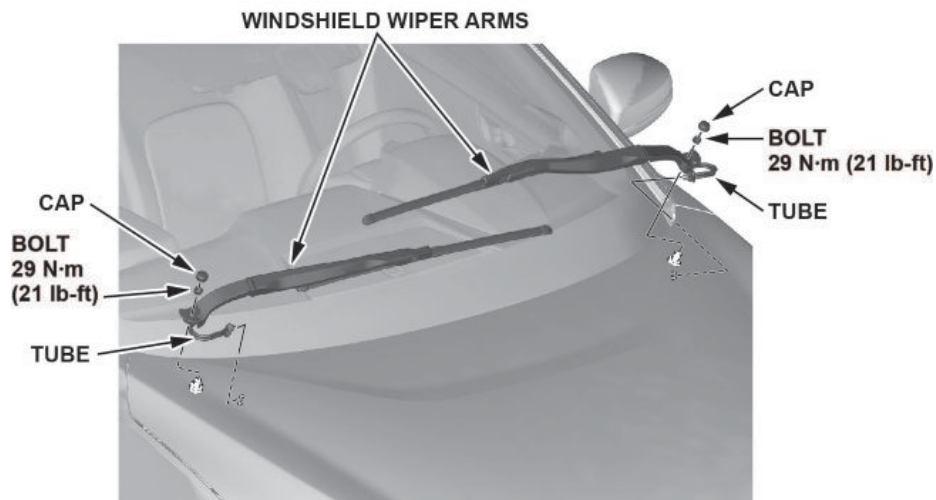
10. Disconnect both hydrogen sensor connectors. **Do not remove the sensor** from ventilation duct A.



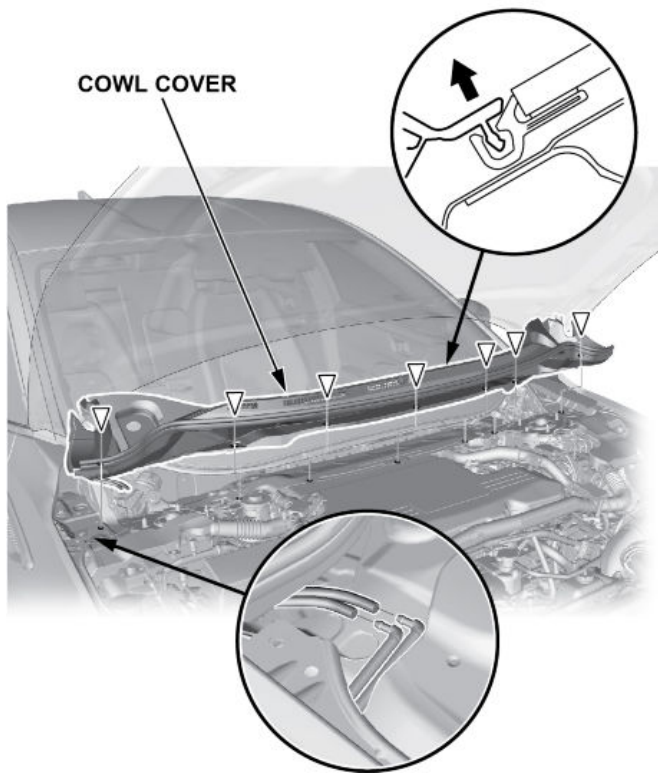
11. Remove FC ventilation duct A as an assembly as shown.



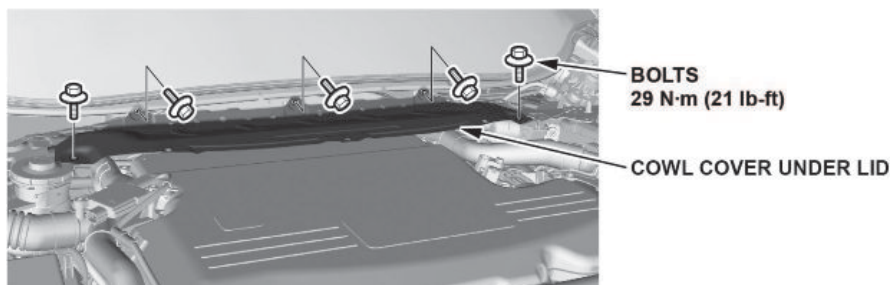
12. Remove the windshield wiper arms.



13. Remove the cowl cover.



14. Remove the cowl cover under lid.

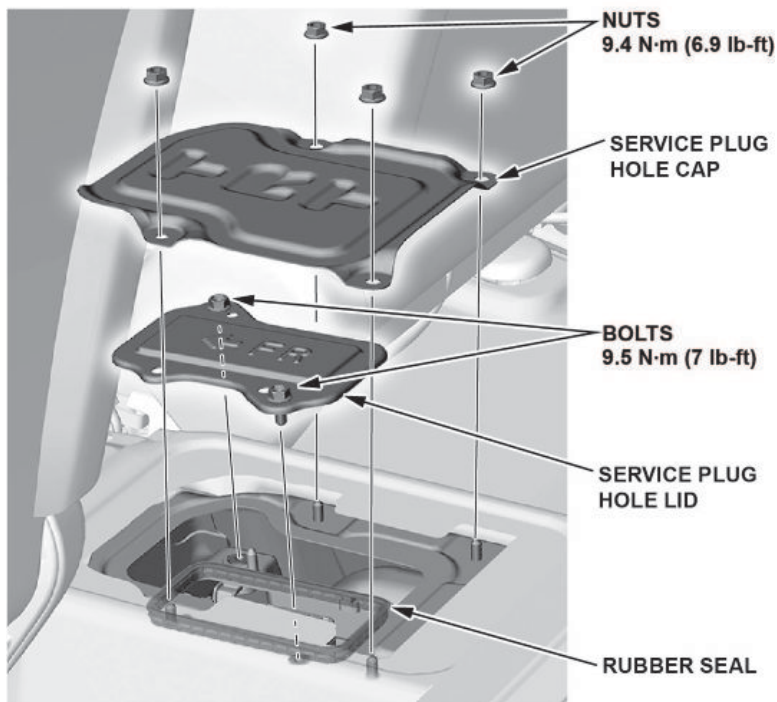


15. Remove the service plug.

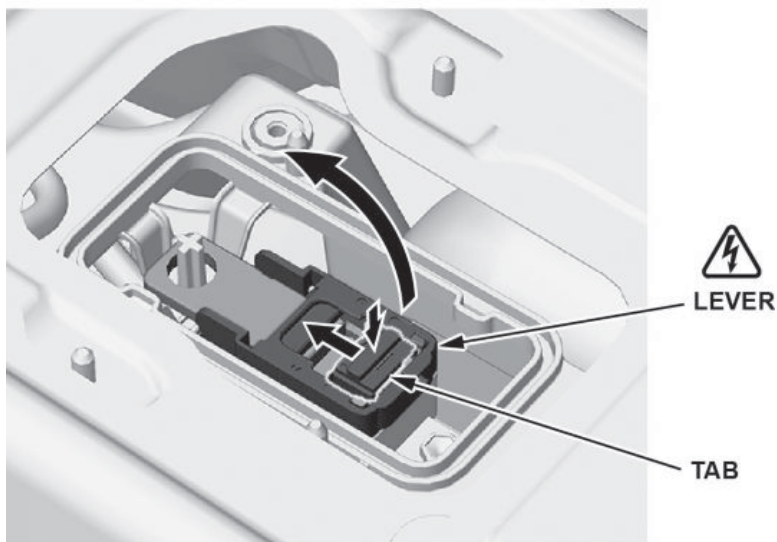
15.1. Pull back the carpet located under the back side of the center console, then remove the service plug hole cap and service plug hole lid.

**NOTE**

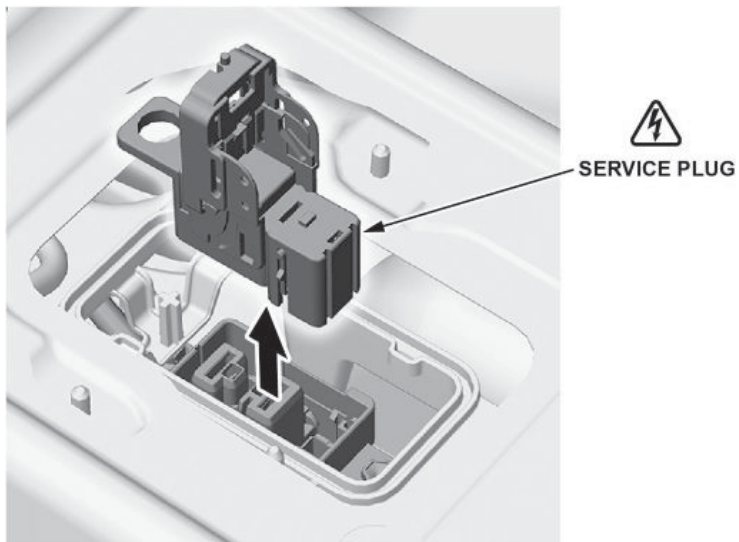
Reuse the service plug hole lid if the seal is not deformed or damaged.



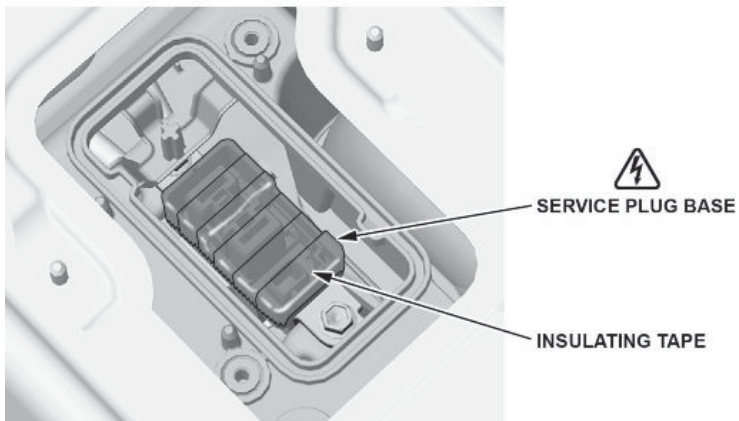
15.2. Raise the lever while pushing and sliding the tab in the direction of the arrow.



15.3. Remove the service plug.



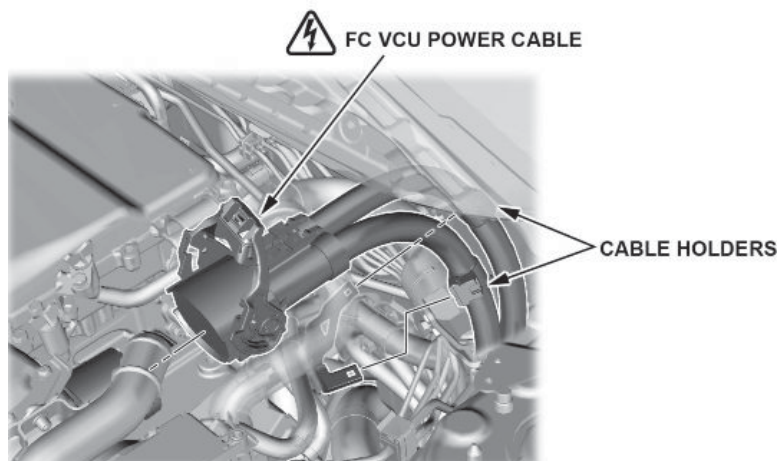
15.4. Wrap the service plug base with insulating tape.



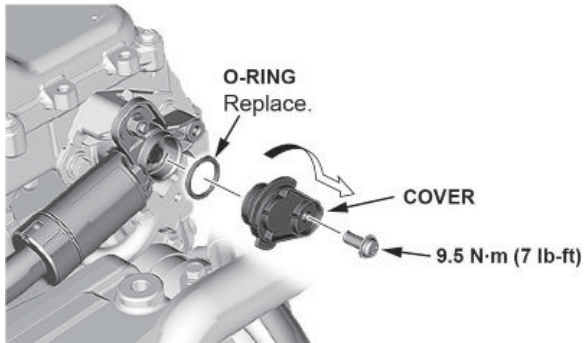
16. Disconnect the FC VCU power cable.

**NOTE**

Wrap insulating tape or a clean shop towel around the connector to prevent oil, water, or dirt from entering.



17. Remove the left and right FC stack power cable cover.



18. Measure the voltage of the FC VCU by connecting a multimeter to both the right and left terminal. Make sure to wait for the voltage to be 30-volts or less before continuing.

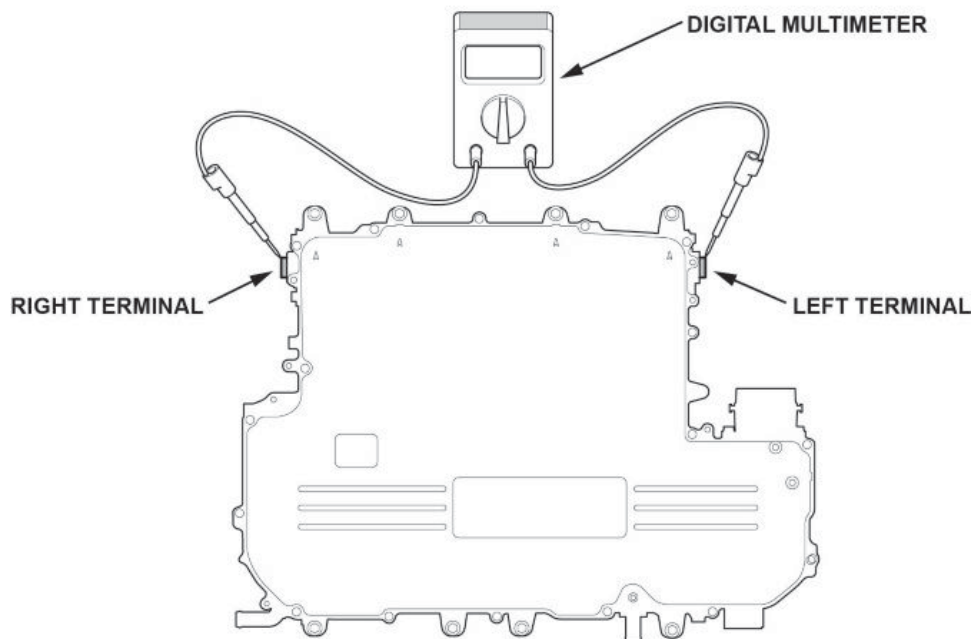
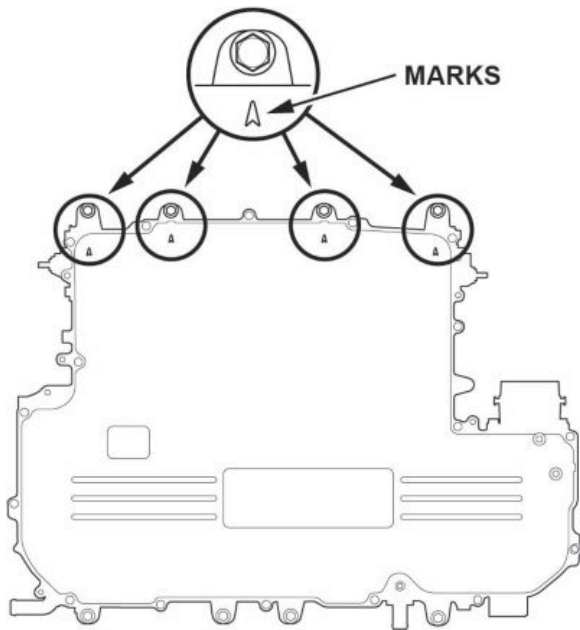


Diagram illustrating the installation of the engine cover. The cover is secured by 12 N·m (9 lb-ft) bolts. Brackets are used to secure the cover to the engine block.

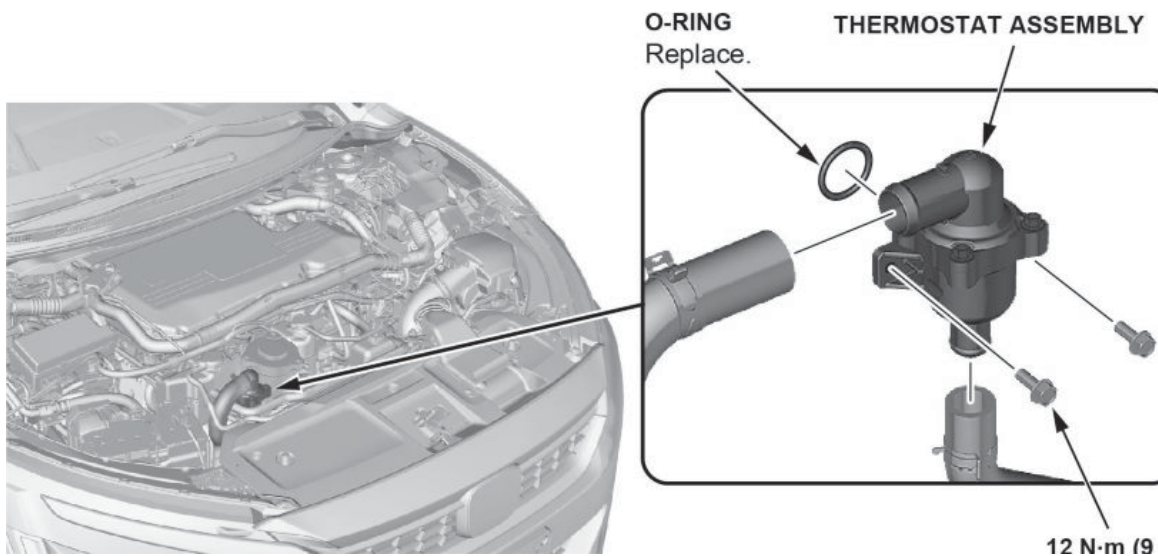


**NOTE**

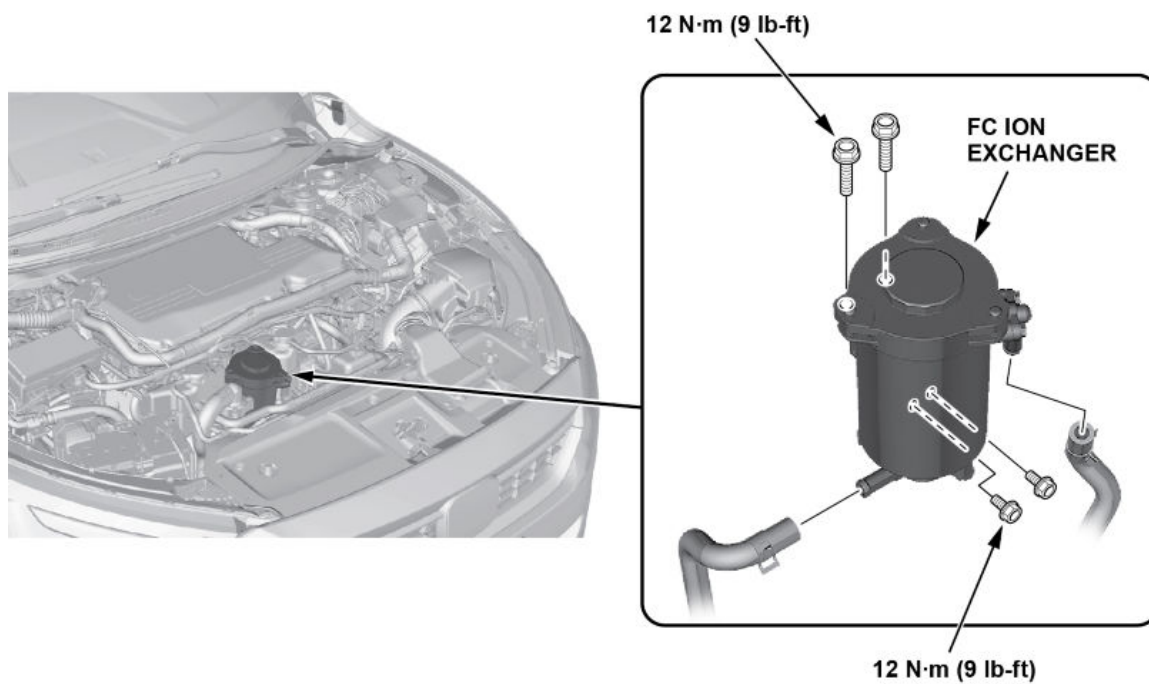
The marks located on the back of the FC VCU show which bolts to remove.



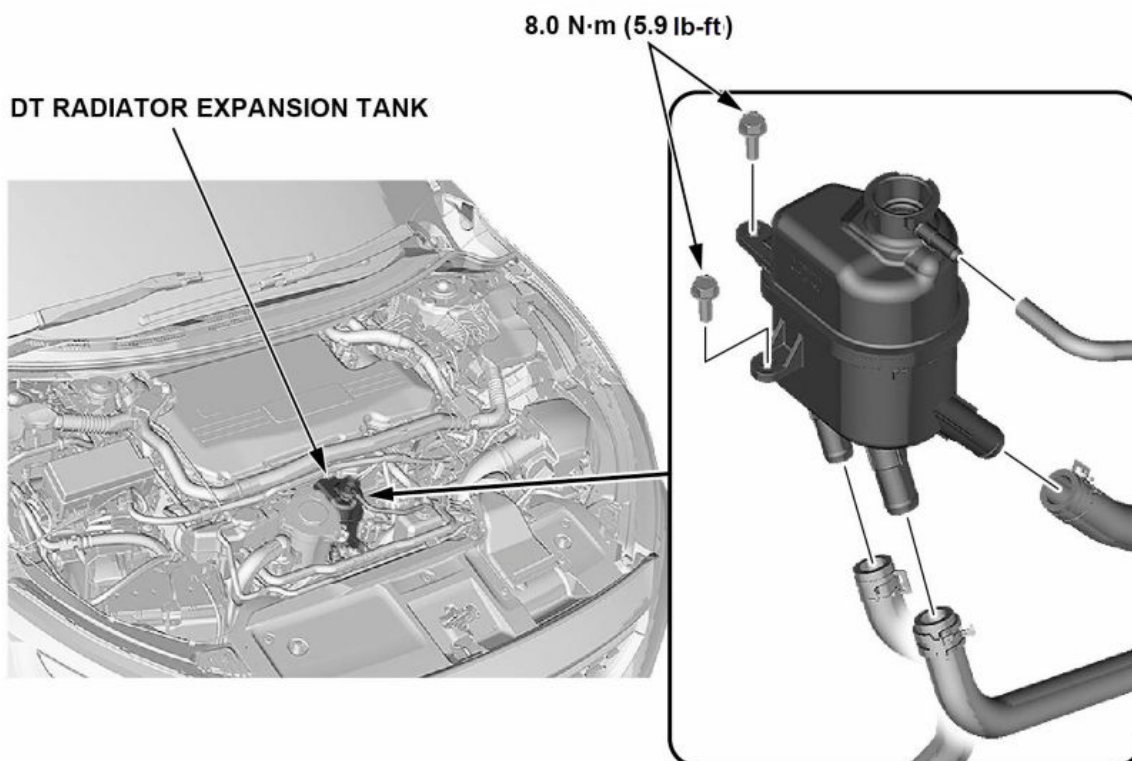
20. Remove the thermostat.



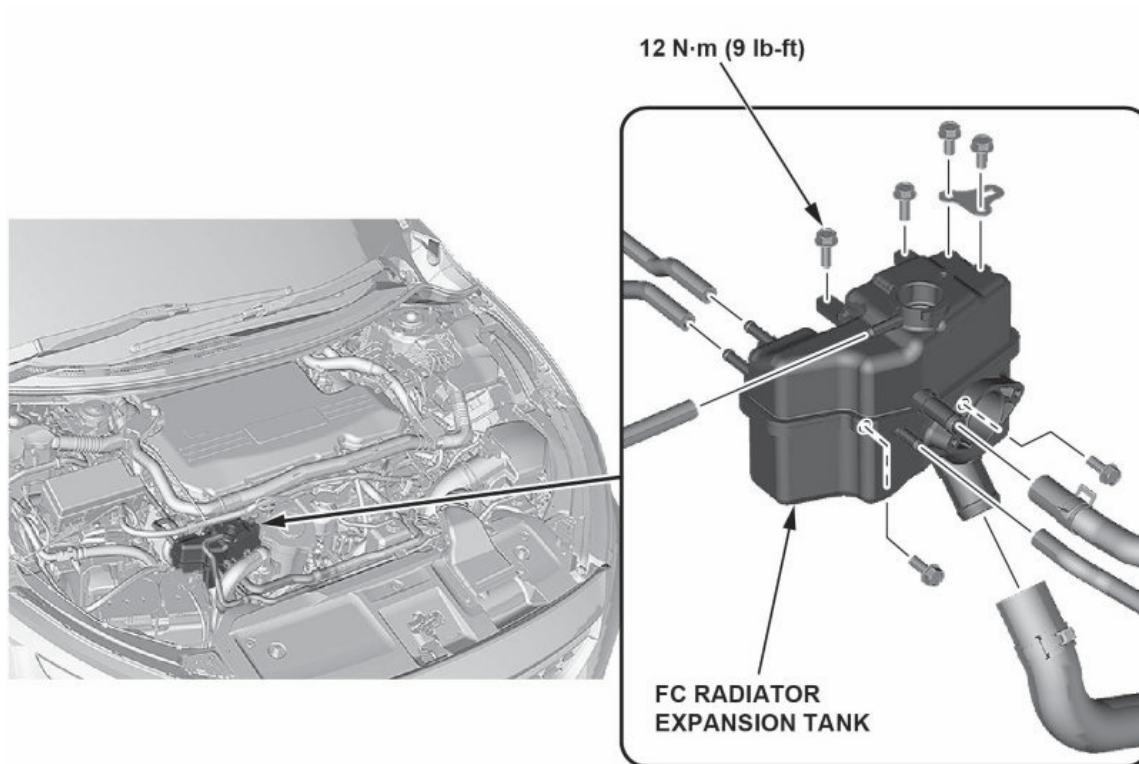
21. Remove the FC ion exchanger.



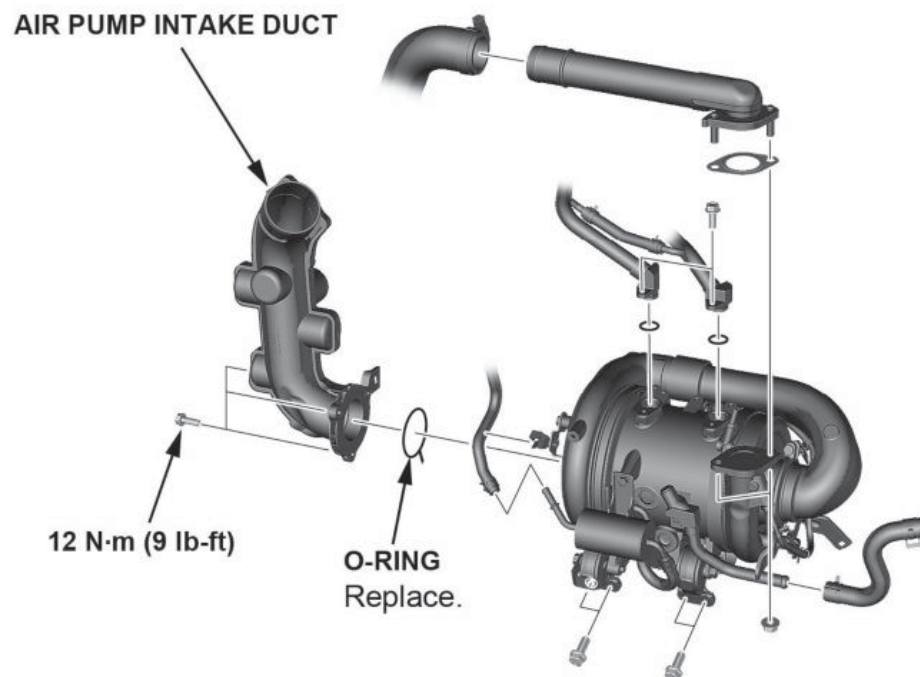
22. Remove the DT radiator expansion tank.



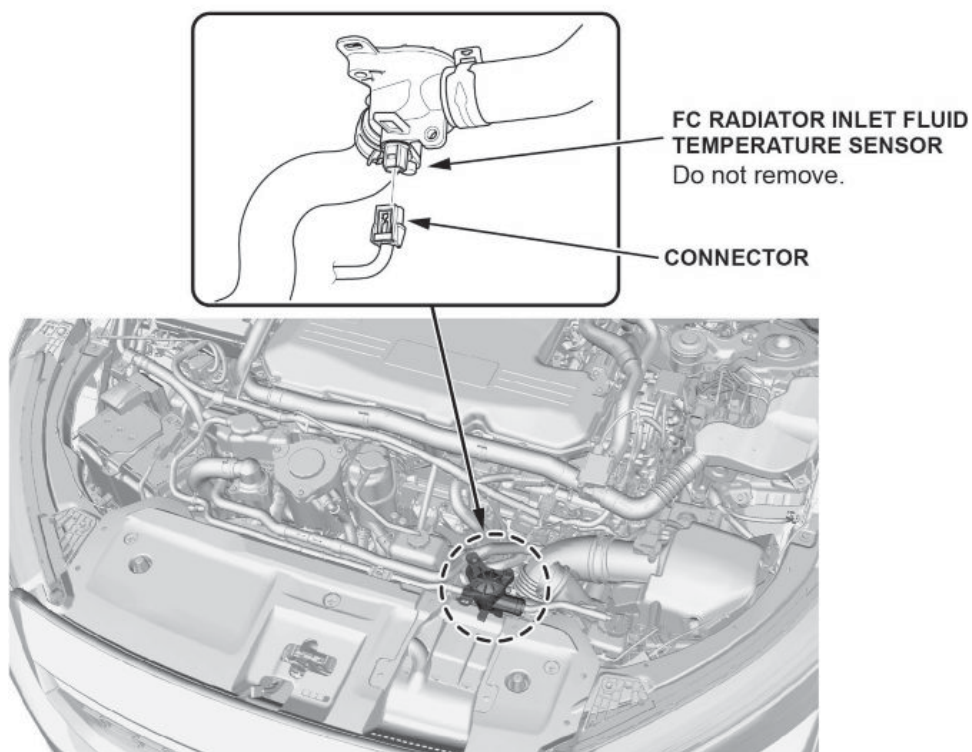
23. Remove the FC radiator expansion tank.



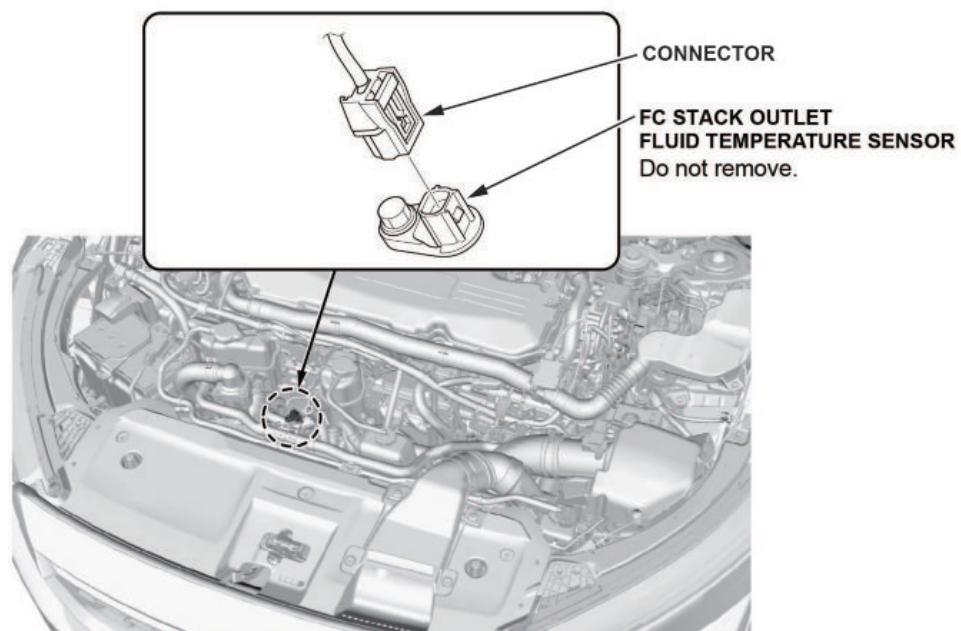
24. Remove the air pump intake duct (air cleaner duct).



25. Disconnect the FC radiator inlet fluid temperature sensor. **Do not remove the sensor.**



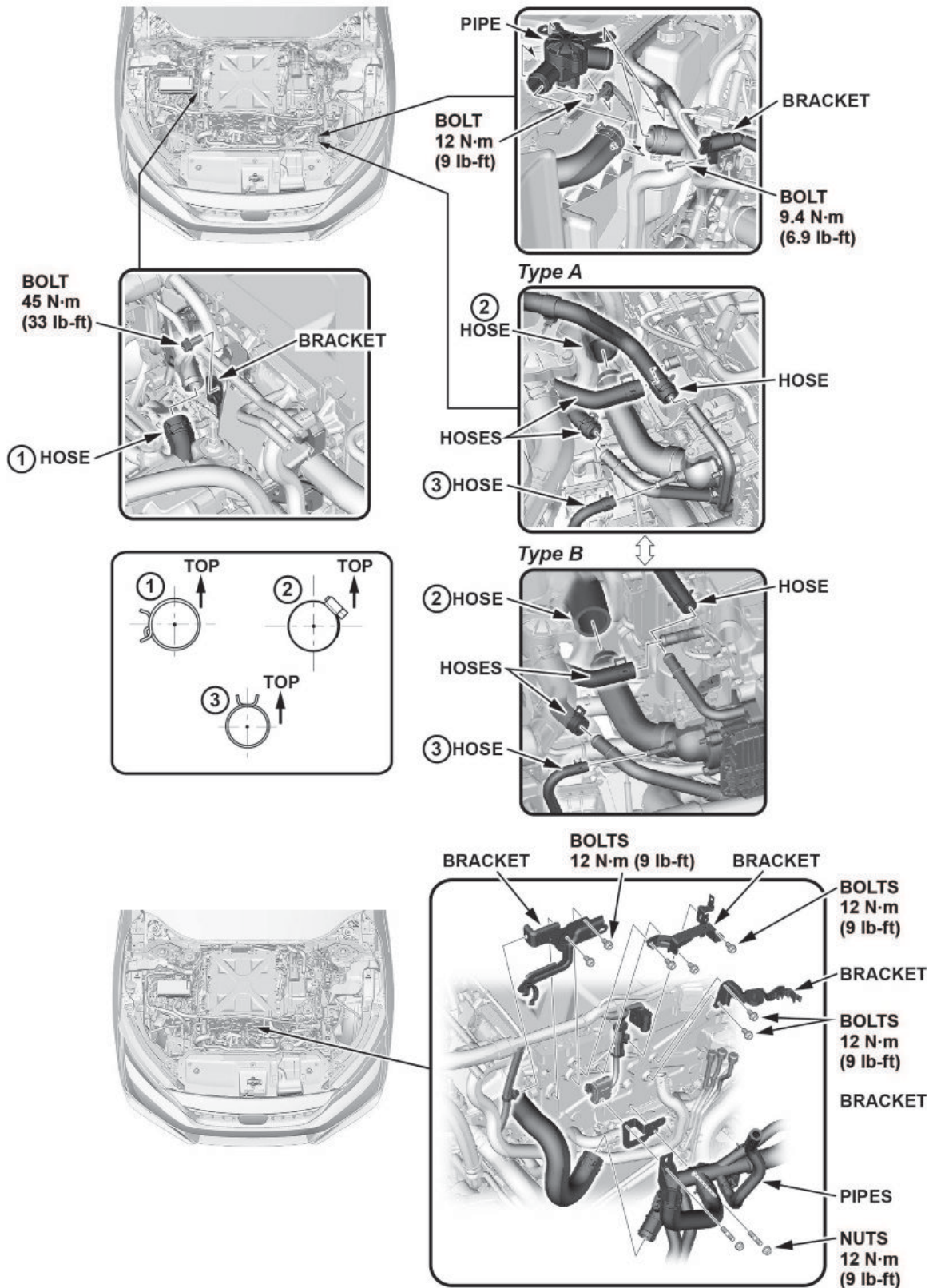
26. Disconnect the FC stack outlet fluid temperature sensor. **Do not remove the sensor.**



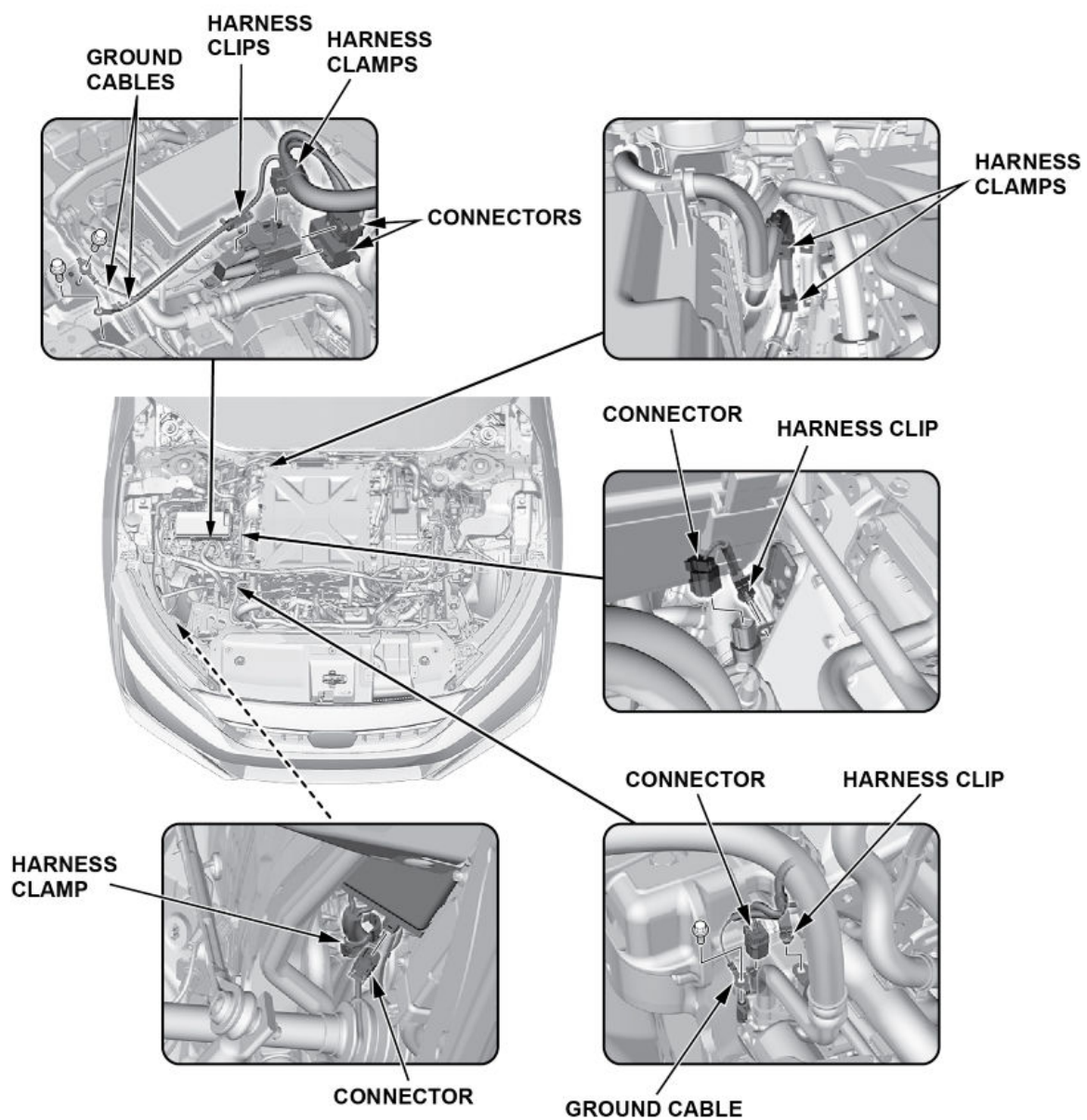
27. Remove the parts surrounding the FC stack.

**NOTE**

This procedure will not require the removal of the FC ECU. **Do not** remove the FC ECU from the FC stack.



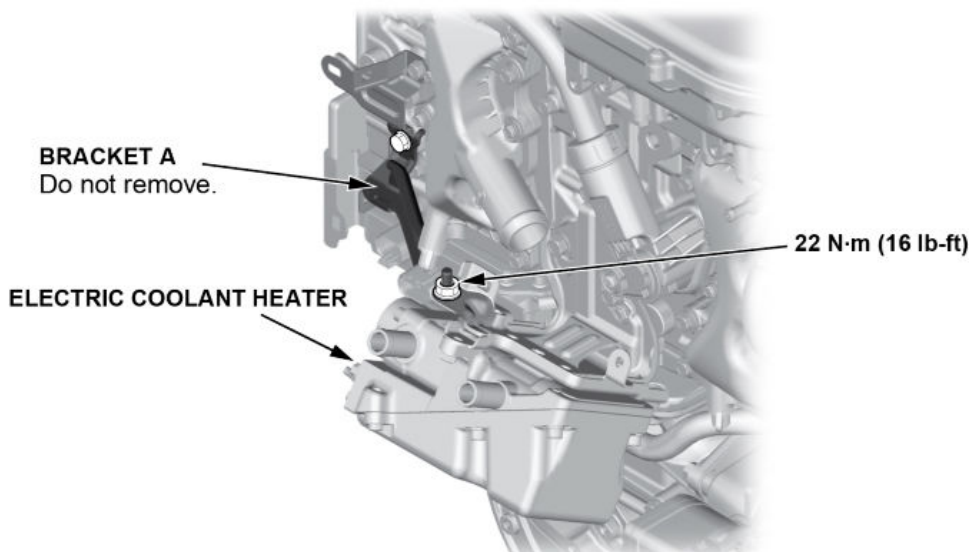
28. Disconnect the FC wire harness.



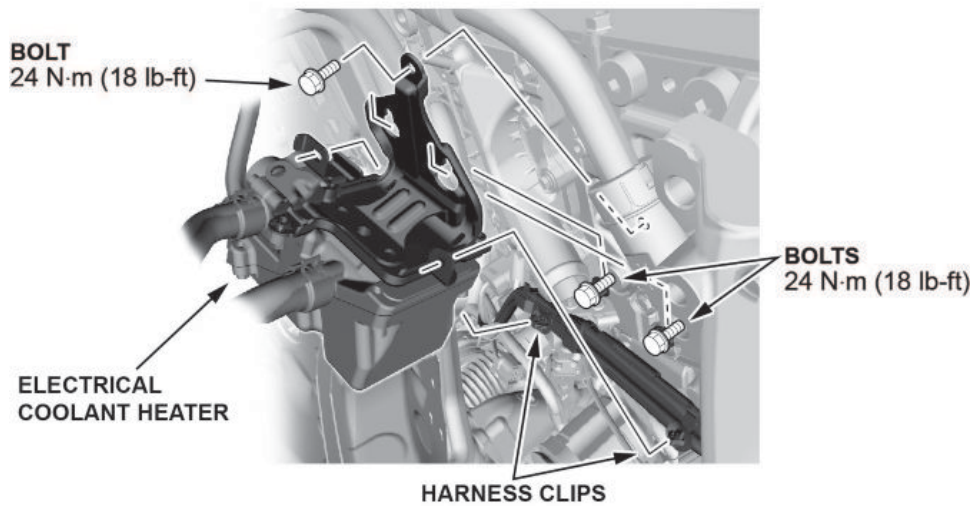
29. Remove the electric coolant heater from the FC stack, but do not remove bracket A. Once the heater is removed, place it on the frame, out of the way.

**NOTE**

You do not need to remove the hoses from the heater, only the electrical connection.

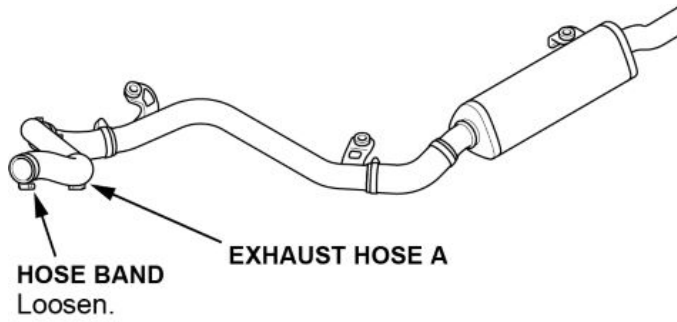


- 29.1. Remove the harness clips.

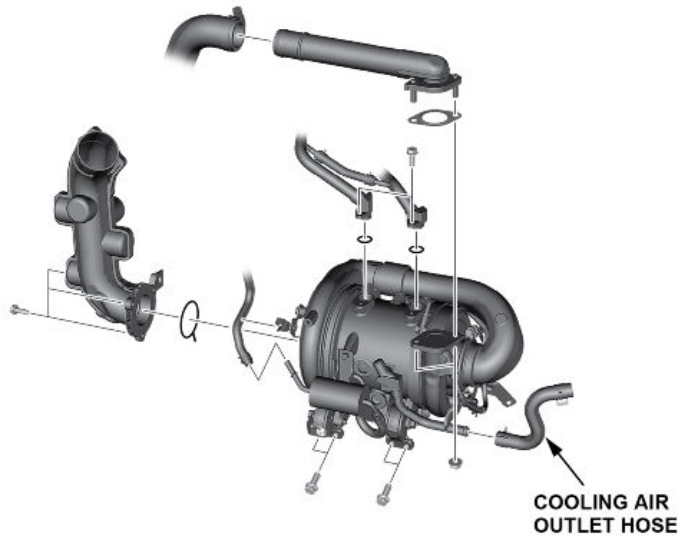


- 29.2. Remove the bolts.
- 29.3. Disconnect the harness connector from the heater.

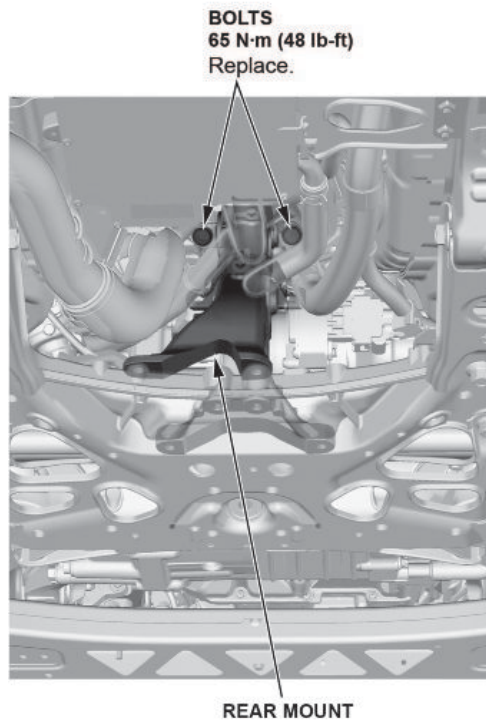
30. Loosen and disconnect, but do not remove exhaust hose A from the FC stack outlet.



31. Disconnect the cooling air outlet hose from the air pump unit.



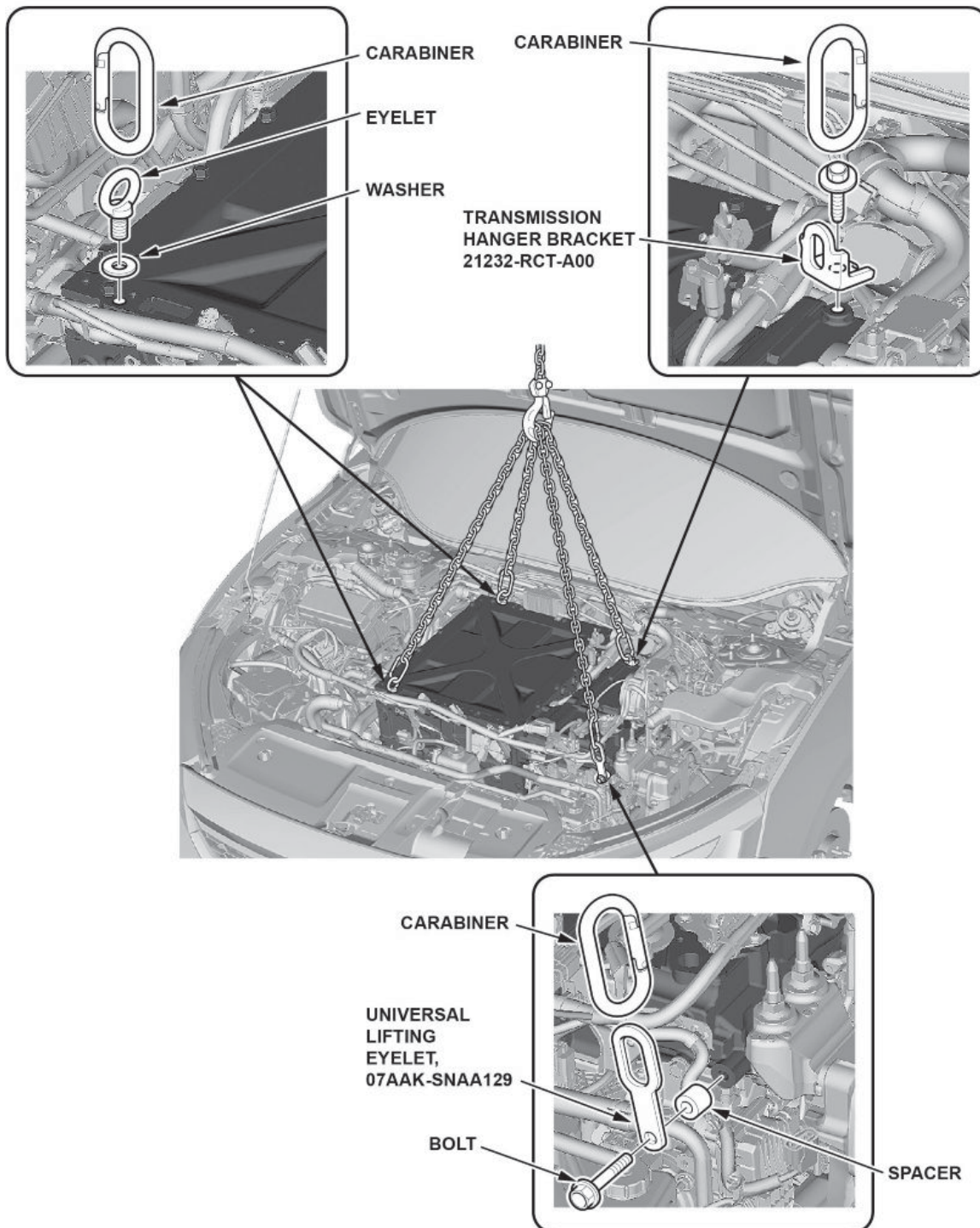
32. Remove the rear mounting bolts from the FC stack.



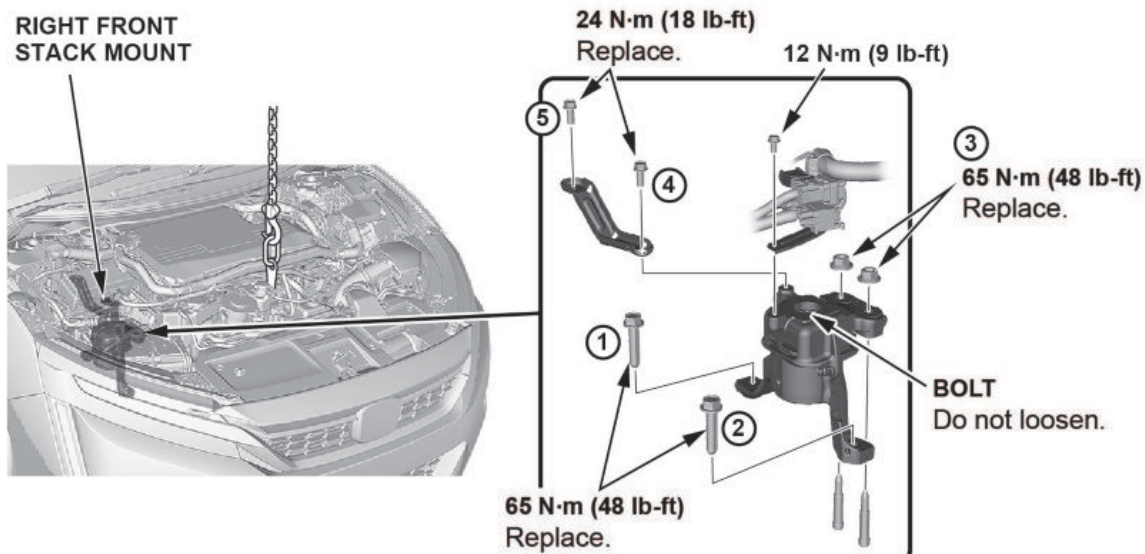
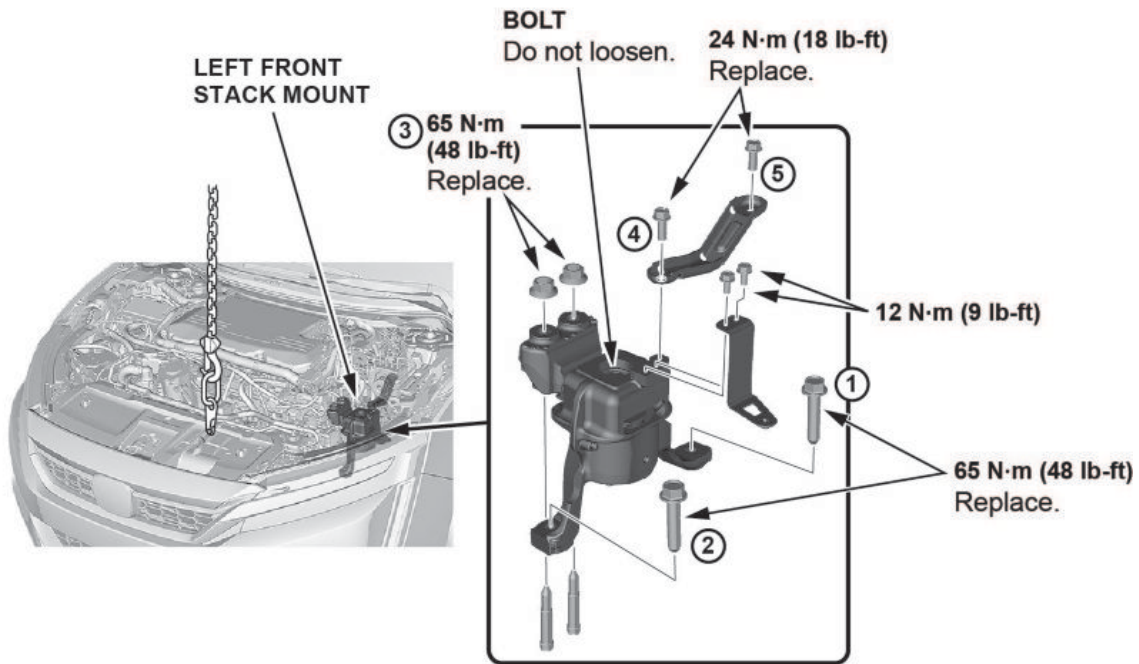
33. Install a chain hoist to the FC stack.

**NOTE**

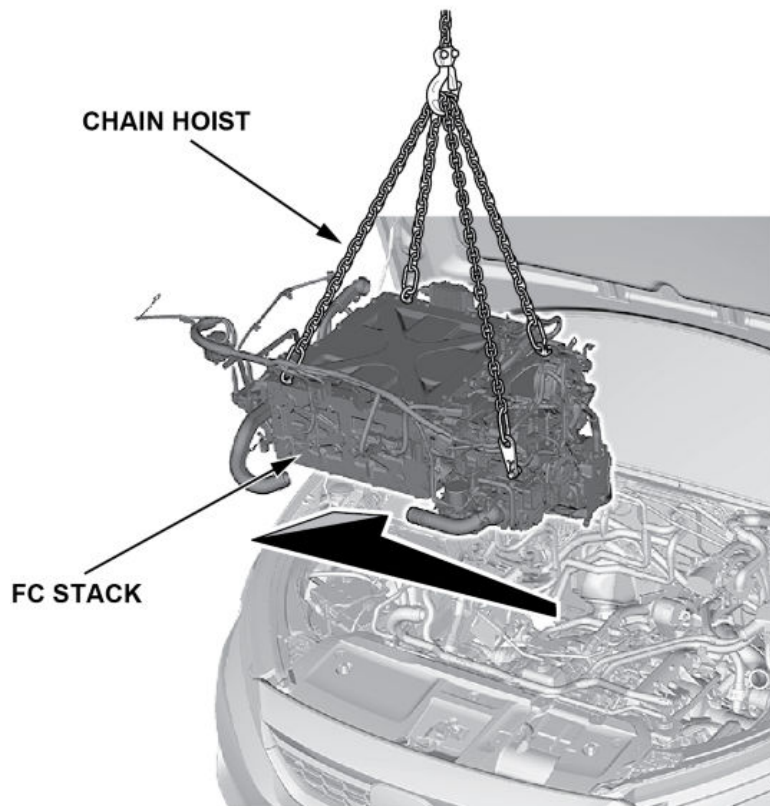
Use a commercially available carabiner, eyelet, washer, spacer, and bolt.



34. Remove the left front and right front FC stack mounts.



35. Remove the FC stack.



36. Write down the VIN and serial number (SN) of the FC stack on your RO.

**Important: If this information is missing on the warranty claim, the claim will be debited. Make sure you write it down on the RO.**



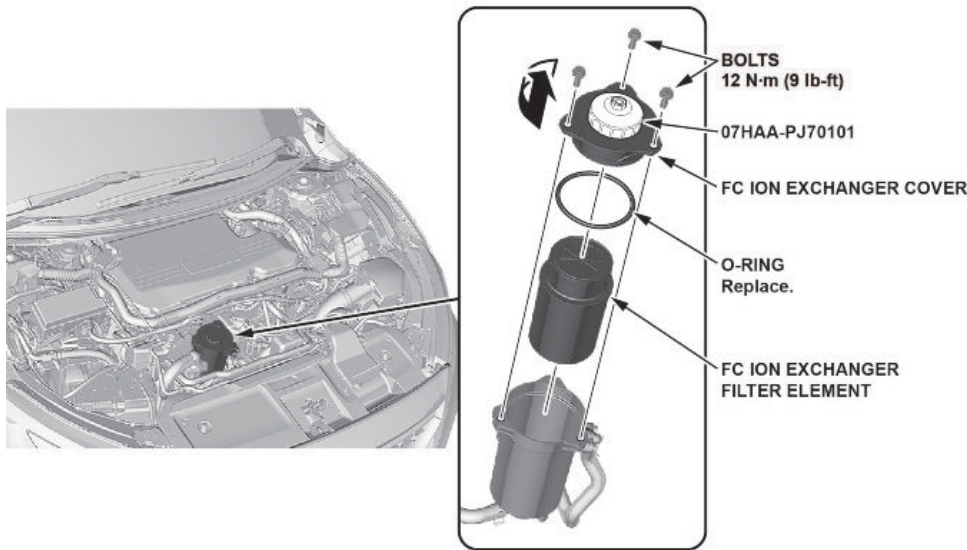
37. Take the FC stack to the vehicle that is receiving the stack.

38. Install the FC stack in reverse order using the parts as needed from the stack kit.

39. Install a new FC ion exchanger filter.

**NOTE**

Remove the cover using an oil filter wrench.



40. Install all of the removed parts in the reverse order of removal.

41. Reset the maintenance minder (A1) using the i-HDS.

**NOTES**

If you are unable to successfully reset the maintenance minder, turn the ignition to OFF and wait **10 minutes** after the air pump unit has stopped.

- After turning the ignition to OFF, the air pump unit will continue to operate for a minute or less (it may be longer in low temperatures) and shut off automatically. Once the air pump unit stops, wait at least **10 minutes** to start the maintenance minder reset procedure.
- To check if the air pump unit is running, go to the back of the vehicle and check the diluter (exhaust pipe outlet). You should hear and feel air coming out of it. Once you stop hearing and feeling the air, the air pump unit has stopped.

42. Partially install the NG FC stack to the donor vehicle.

**NOTE**

You do not have to install the FC stack completely; just bolt down the left front and right front stack mounts to hold the stack in position. You are not required to install all other connections and parts. Excess parts can be stored in the trunk.

END