

## REMOVAL

### CAUTION:

- When working on high voltage systems, always wear insulating gloves.
- Keep the removed service plug in your pocket to prevent other technicians from reconnecting it while you are servicing the vehicle.
- After removing the service plug grip, do not touch the high voltage connectors and terminals for 5 minutes.

### NOTICE:

After removing the service plug grip, do not operate the power switch as it may damage the hybrid vehicle control ECU.

#### 1. PRECAUTION

##### CAUTION:

The hybrid system uses high voltage circuits, so improper handling could cause an electric shock or leakage. During service (including installation/removal, inspection and replacement of parts), be sure to follow the procedures (see page [HV-1](#)).

2. REMOVE ENGINE UNDER COVER LH
3. REMOVE ENGINE UNDER COVER RH
4. DRAIN HV COOLANT (See page [HX-58](#))
5. REMOVE REAR NO. 2 FLOOR BOARD (See page [CH-4](#))
6. REMOVE REAR DECK FLOOR BOX (See page [CH-4](#))
7. REMOVE REAR NO. 3 FLOOR BOARD (See page [CH-4](#))
8. DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL  

##### CAUTION:

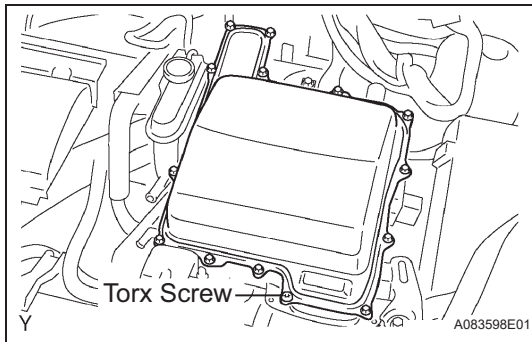
Wait at least 90 seconds after disconnecting the cable from the negative (-) battery terminal to prevent airbag and seat belt pretensioner activation.
9. REMOVE SERVICE PLUG GRIP (See page [HB-154](#))
10. REMOVE FRONT WIPER ARM COVER
11. REMOVE FRONT WIPER ARM RH (See page [WW-13](#))
12. REMOVE FRONT WIPER ARM LH (See page [WW-13](#))
13. REMOVE HOOD TO COWL TOP SEAL (See page [WW-13](#))
14. REMOVE COWL TOP VENTILATOR LOUVER LH (See page [WW-13](#))
15. REMOVE COWL TOP VENTILATOR LOUVER RH (See page [WW-13](#))
16. REMOVE FRONT WIPER LINK AND WIPER MOTOR ASSEMBLY (See page [WW-13](#))

17. REMOVE FRONT COWL TOP PANEL OUTER (See page [FU-12](#))

18. REMOVE RADIATOR SUPPORT OPENING COVER

19. REMOVE INVERTER COVER

- (a) Using a T30 "torx" socket, remove the screw.
- (b) Remove the 12 bolts and inverter cover.



20. VERIFY THAT VOLTAGE OF INVERTER WITH CONVERTER IS 0 V

**CAUTION:**

**Wear insulating gloves.**

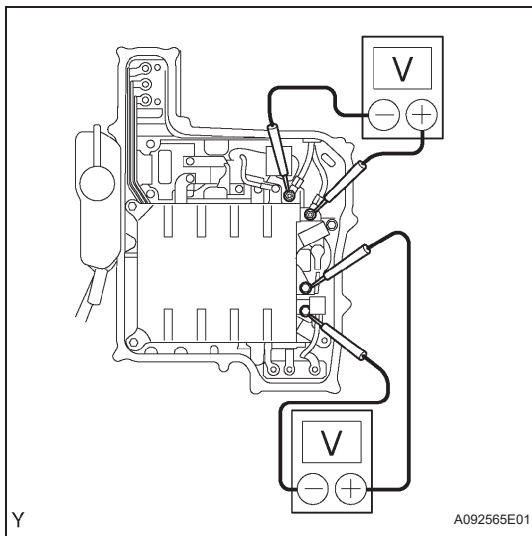
- (a) Using a voltmeter, measure the voltage of the high voltage DC line.

**Standard voltage:**

**0 V**

**HINT:**

Use a measuring range of DC 400 V or more on the voltmeter.



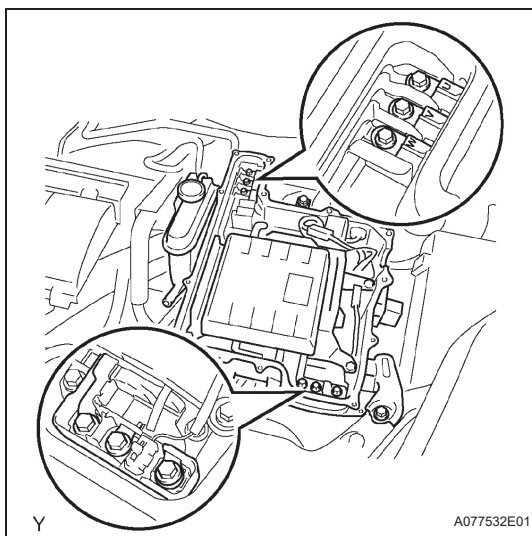
- (b) Using the voltmeter, measure the voltage between the terminals of the three phase connector (U - V, V - W, U - W).

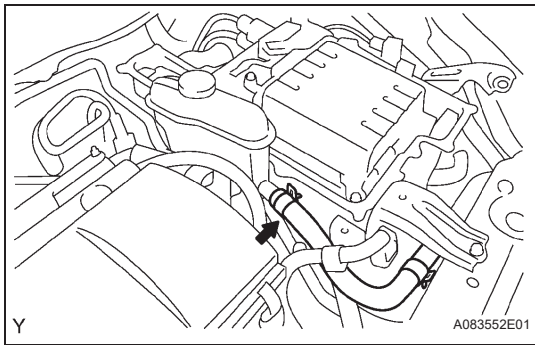
**Standard voltage:**

**0 V**

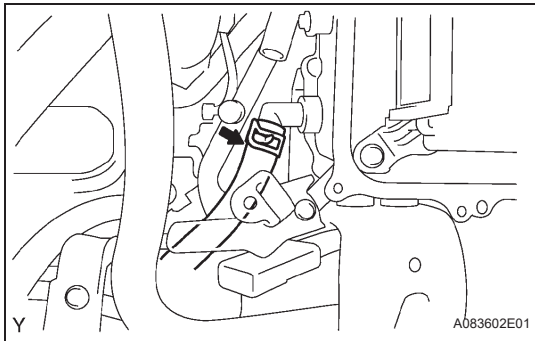
**HINT:**

Use a measuring range of DC 400 V or more on the voltmeter.

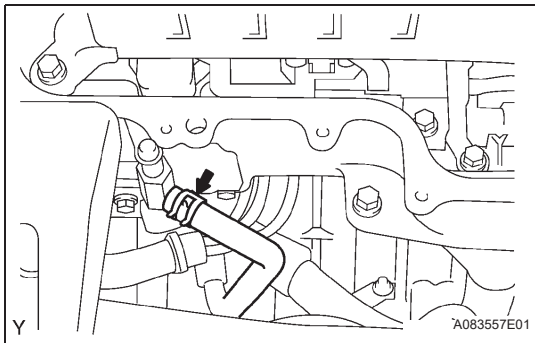




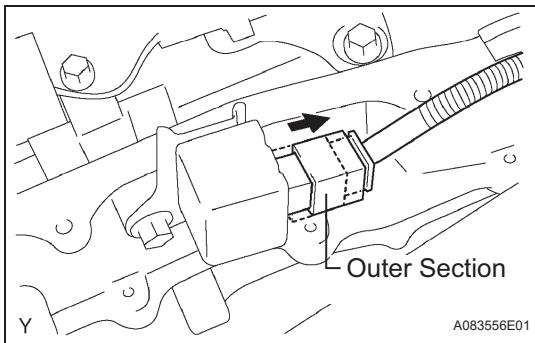
**21. DISCONNECT NO. 2 INVERTER COOLING HOSE**



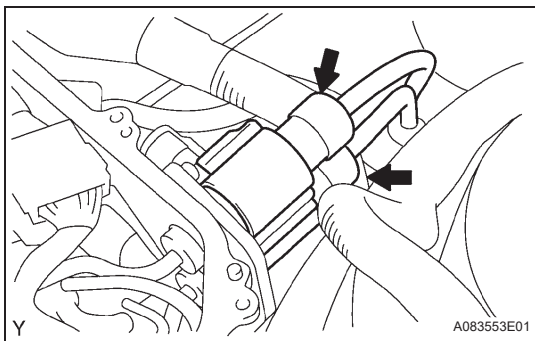
**22. DISCONNECT NO. 1 INVERTER COOLING HOSE**



**23. DISCONNECT NO. 6 INVERTER COOLING HOSE**



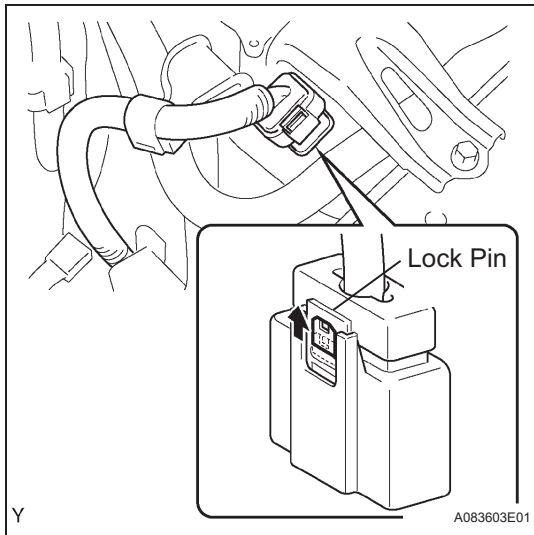
**24. DISCONNECT NO. 1 CIRCUIT BREAKER SENSOR**  
 (a) Move the outer section to the wire harness side as illustrated, and then disconnect the circuit breaker sensor.



**25. DISCONNECT FRAME WIRE**  
**CAUTION:**

- Wear insulating gloves.
- After removing the service plug grip, be sure to wait for at least 5 minutes before performing any work.
- Insulate the electrode and connector parts with insulating tape.

(a) Remove the 2 frame wire connectors from the inverter with converter assembly.



## 26. REMOVE INVERTER WITH CONVERTER ASSEMBLY

- (a) Using a small screwdriver, lift up the lock pin (green) as illustrated to unlock it.

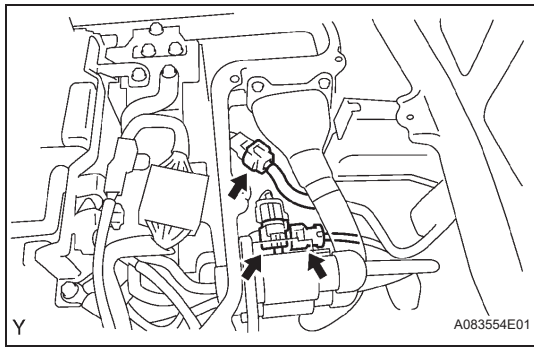
**CAUTION:**

**Wear insulating gloves.**

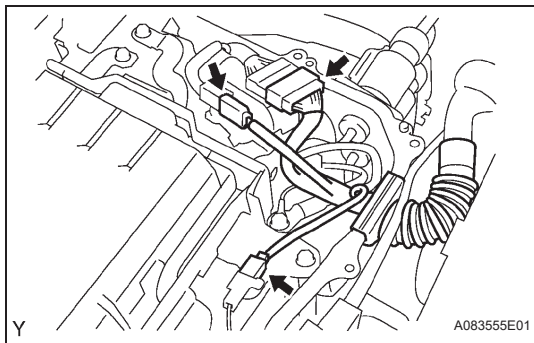
- (b) Disconnect the connector for the air conditioning inverter.

**CAUTION:**

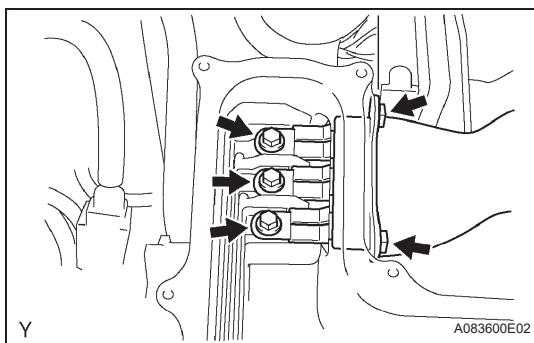
**Wear insulating gloves.**



- (c) Disconnect the 3 connectors shown in the illustration.



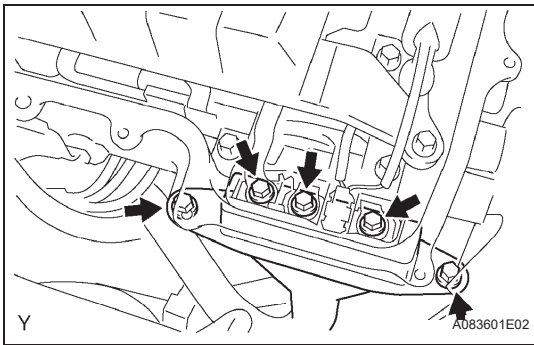
- (d) Disconnect the 3 connectors shown in the illustration and the engine main wire harness.



- (e) Remove the 5 bolts, then disconnect the MG2 power cable.

**CAUTION:**

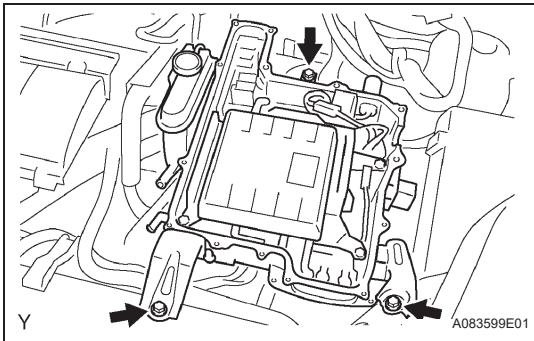
- **Wear insulating gloves.**
- **Insulate the connector parts with insulating tape.**



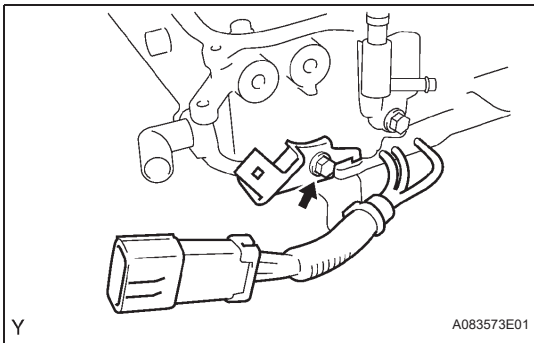
- (f) Remove the 5 bolts, then disconnect the MG1 power cable.

**CAUTION:**

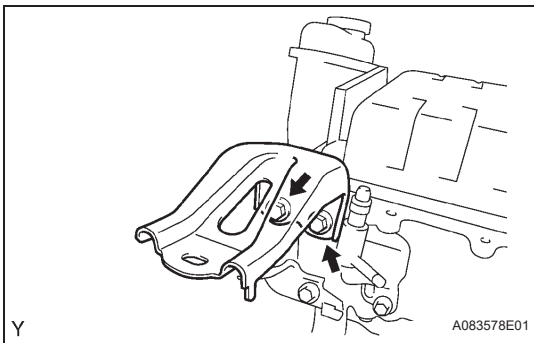
- **Wear insulating gloves.**
- **Insulate the connector parts with insulating tape.**



- (g) Remove the 3 bolts and the inverter with converter assembly.

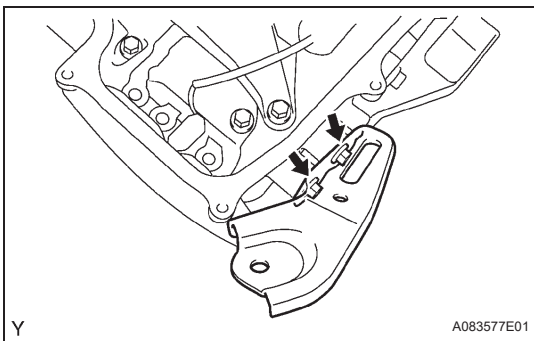


- (h) Disconnect the connector for the air conditioning inverter from the bracket.  
 (i) Remove the bolt and connector bracket for the air conditioning inverter.



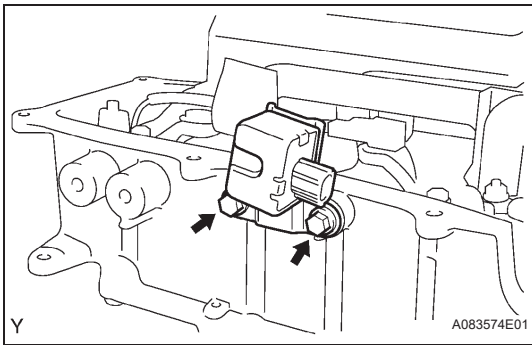
**27. REMOVE NO. 1 INVERTER BRACKET**

- (a) Remove the 2 bolts and inverter bracket.



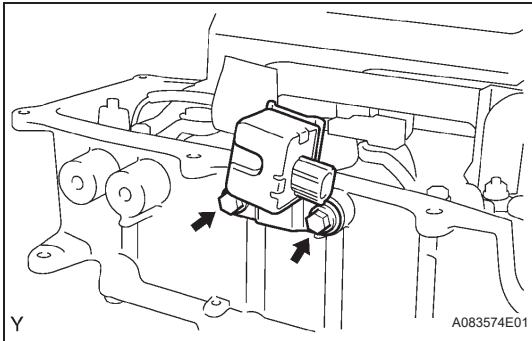
**28. REMOVE NO. 2 INVERTER BRACKET**

- (a) Remove the 2 bolts and inverter bracket.



## 29. REMOVE NO. 1 CIRCUIT BREAKER SENSOR

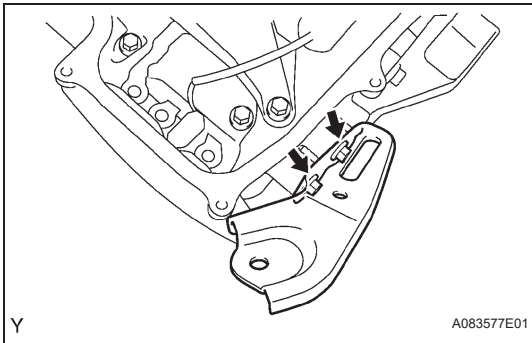
- (a) Remove the 2 bolts and circuit breaker sensor.



## INSTALLATION

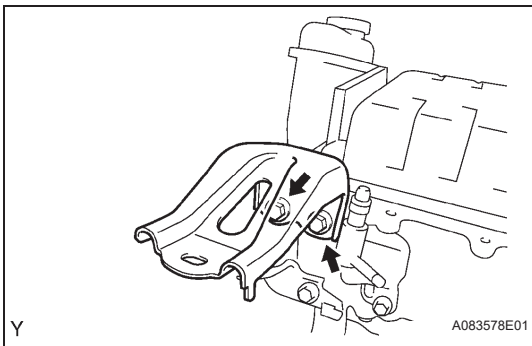
### 1. INSTALL NO. 1 CIRCUIT BREAKER SENSOR

- (a) Install the circuit breaker sensor with the 2 bolts.  
**Torque: 8.0 N\*m (82 kgf\*cm, 71 in.\*lbf)**



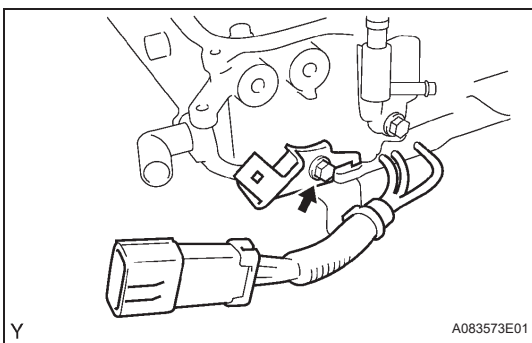
### 2. INSTALL NO. 2 INVERTER BRACKET

- (a) Install the inverter bracket with the 2 bolts.  
**Torque: 25 N\*m (255 kgf\*cm, 18 in.\*lbf)**



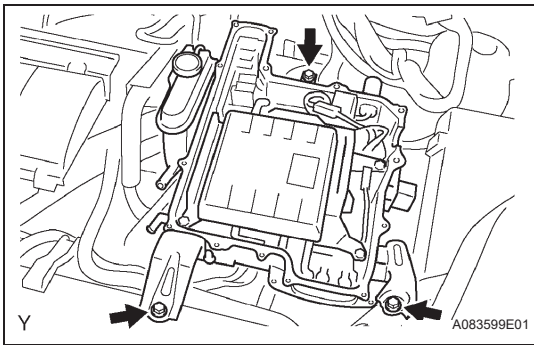
### 3. INSTALL NO. 1 INVERTER BRACKET

- (a) Install the inverter bracket with the 2 bolts.  
**Torque: 25 N\*m (255 kgf\*cm, 18 in.\*lbf)**



### 4. INSTALL INVERTER WITH CONVERTER ASSEMBLY

- (a) Install the connector bracket for the air conditioning inverter with the bolt.  
**Torque: 8.0 N\*m (82 kgf\*cm, 71 in.\*lbf)**
- (b) Install the connector for the air conditioning inverter on the bracket.

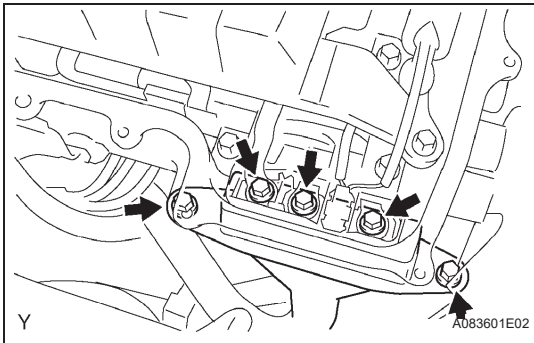


- (c) Install the inverter with converter assembly with the 3 bolts.

**Torque: 21 N\*m (214 kgf\*cm, 16 in.\*lbf)**

**CAUTION:**

**Wear insulating gloves.**

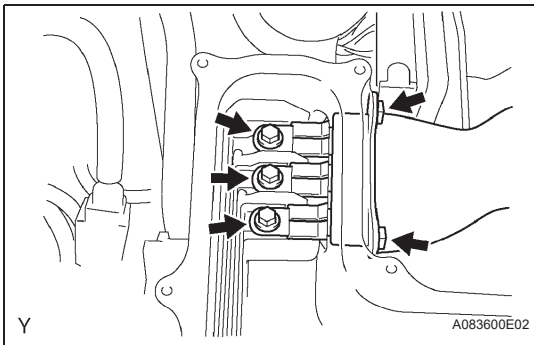


- (d) Install the MG1 power cable to the MG1 power cable terminal with the 5 bolts.

**Torque: 8.0 N\*m (82 kgf\*cm, 71 in.\*lbf)**

**CAUTION:**

**Wear insulating gloves.**

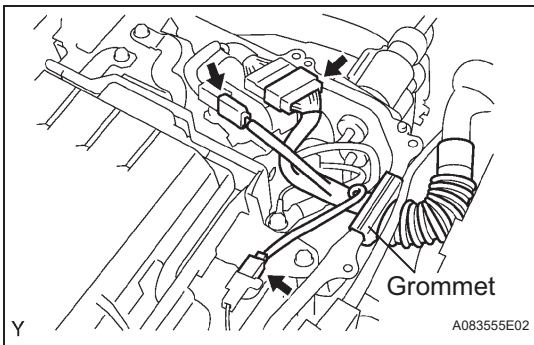


- (e) Install the MG2 power cable to the MG2 power cable terminal with the 3 bolts.

**Torque: 8.0 N\*m (82 kgf\*cm, 71 in.\*lbf)**

**CAUTION:**

**Wear insulating gloves.**



- (f) Connect the 3 connectors shown in the illustration.

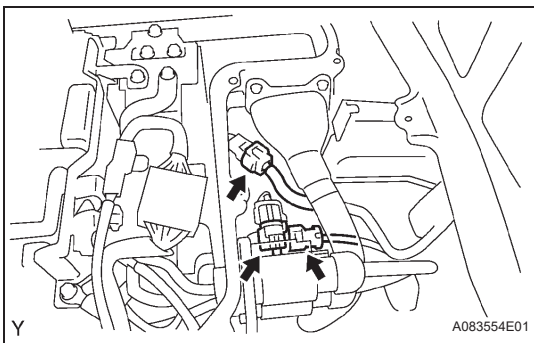
**CAUTION:**

**Wear insulating gloves.**

- (g) Insert the grommet of the engine main wire harness into the U-shaped groove of the inverter case.

**CAUTION:**

**Wear insulating gloves.**



- (h) Connect the 3 connectors shown in the illustration.

**CAUTION:**

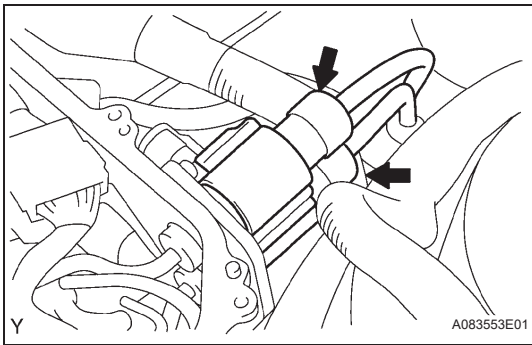
**Wear insulating gloves.**

- (i) Connect the connector for the air conditioning inverter, then lock the connector with the lock pin.

**CAUTION:**

**Wear insulating gloves.**





**5. CONNECT FRAME WIRE**

- (a) Connect the 2 frame wire connectors to the inverter with converter assembly.

**CAUTION:**

Wear insulating gloves.

**6. CONNECT NO. 1 CIRCUIT BREAKER SENSOR**

**CAUTION:**

Wear insulating gloves.

**7. CONNECT NO. 6 INVERTER COOLING HOSE**

**8. CONNECT NO. 1 INVERTER COOLING HOSE**

**9. CONNECT NO. 2 INVERTER COOLING HOSE**

**10. INSTALL INVERTER COVER**

- (a) Temporarily fasten the inverter cover with the 12 bolts and "torx" screw.

- (b) Tighten the 12 bolts.

**Torque: 11 N\*m (112 kgf\*cm, 8.1 in.\*lbf)**

- (c) Using a T30 "torx" socket, tighten the "torx" screw.

**Torque: 11 N\*m (112 kgf\*cm, 8.1 in.\*lbf)**

**11. INSTALL RADIATOR SUPPORT OPENING COVER**

**12. INSTALL FRONT COWL TOP PANEL OUTER (See page [FU-19](#))**

**13. INSTALL WINDSHIELD WIPER LINK AND WIPER MOTOR ASSEMBLY (See page [WW-16](#))**

**14. INSTALL COWL TOP VENTILATOR LOUVER RH**

**15. INSTALL COWL TOP VENTILATOR LOUVER LH**

**16. INSTALL HOOD TO COWL TOP SEAL**

**17. INSTALL FRONT WIPER ARM LH (See page [WW-16](#))**

**18. INSTALL FRONT WIPER ARM RH (See page [WW-16](#))**

**19. INSTALL WINDSHIELD WIPER ARM COVER**

**20. INSTALL SERVICE PLUG GRIP (See page [HB-154](#))**

**21. CONNECT CABLE TO NEGATIVE BATTERY TERMINAL (See page [CH-7](#))**

**22. INSTALL REAR NO. 3 FLOOR BOARD (See page [CH-8](#))**

**23. INSTALL REAR DECK FLOOR BOX (See page [CH-8](#))**

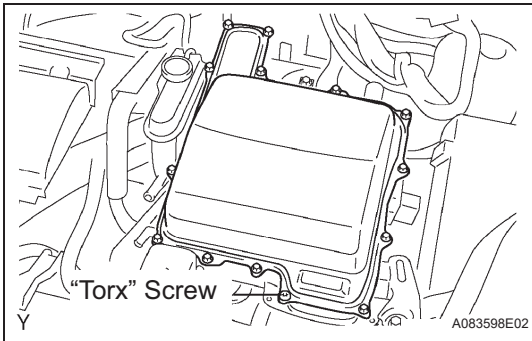
**24. INSTALL REAR NO. 2 FLOOR BOARD (See page [CH-8](#))**

**25. ADD HV COOLANT (See page [HX-58](#))**

**26. CHECK FOR ENGINE COOLANT LEAKAGE (See page [CO-2](#))**

**27. INSTALL ENGINE UNDER COVER RH**

**28. INSTALL ENGINE UNDER COVER LH**





**29. PERFORM INITIALIZATION**

- (a) Perform initialization (see page [IN-32](#)).

**NOTICE:**

**Certain systems need to be initialized after disconnecting and reconnecting the cable from the negative (-) battery terminal.**