



PARTS ALERT

HYBRID BATTERY CORE RETURN INSTRUCTION

Please be aware that the Hybrid Hino Truck batteries are to be recycled & now have a core charge attached to them as necessary. Part information & part numbers are displayed below.

NiMh Hybrid Hino Truck Batteries | Batteries - Dry

Part Numbers:

G951037020 --> G951037030

G928037040 --> G928037050

When returning Hybrid Batteries to the Hino Trucks Core Return Facility:

Follow the standard Hino core return procedures **plus** the shipping instruction on the following pages **to eliminate any fees from incorrect packaging or shipping**. These batteries contain hazardous material and must be packaged & shipped according to the law. Not following the procedures may result in fee's being back-charged to the dealership.

Refer to the following handling & shipping instruction & contact your Technical Service Manager or your District Parts Manager with any questions.

For standard Core Return Procedures view the [Hino Core Acceptance Guide](#).

All shipment should be made to the Hino Core Consolidation Center at the following address:

Neo Brake Systems
6881 S. 10th Street
Oak Creek, WI 53154

TO:

General, Parts & Service
Managers
Principals
Warranty

BULLETIN: PA-2016-073
DATE: 9-6-2016
EXP: NA

Hino Trucks reserves the right to make changes, including change in price, content, description, terms, time period, etc. at any time without notice.



Hino Trucks National PDC
Phone: (866) 372-4466 | Fax: (662) 342-5151
E-Mail: helpdesk@hino.com

This HV Battery Recycling Manual for the HINO 195H Series should be carefully read and used only by qualified Hybrid technicians.

Corresponded Model: XFC***-*****

Important Symbols and Signs

 DANGER	“DANGER” as used in this manual indicates a hazardous situation which, if not avoided, will result in death or serious injury.
 WARNING	“WARNING” as used in this manual indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.
NOTICE	“NOTICE” as used in this manual addresses practices and situations which could result in vehicle damage if ignored.

 DANGER

HIGH VOLTAGE

To prevent death or serious injuries including electric shocks or severe burns

- NEVER work on the Hybrid System of the HINO 195H Series unless you are a qualified Hybrid technician who has undergone the training required by Hino. Handling the HV Battery unit may require the Hybrid technicians to meet specific qualifications as established by governmental regulations.
- ALWAYS remove the Service Plug with the ignition shut off and with the ignition key removed before starting any work.
- NEVER use any tool or device to strike or penetrate or create a hole in the HV Battery unit. Penetration of the unit could cause the leakage of alkaline electrolyte.
- ALWAYS keep the HV Battery unit out of the reach of children.

 WARNING

HAZARDOUS MATERIAL

To avoid severe burns or other injuries

- NEVER touch alkaline electrolyte leaking from the HV Battery unit.
- ALWAYS keep your eyes, face, skin and clothing away from the alkaline electrolyte.
- If alkaline electrolyte gets in your eyes, call for help, flush with plenty of water without rubbing, and get a diagnosis from a medical specialist as soon as possible.
- If alkaline electrolyte comes into contact with the skin, immediately flush away with saturated solution of boric acid or plenty of water. If alkaline electrolyte comes into contact with your clothes, take your clothes off immediately.
- NEVER expose the HV Battery unit to open flame or incinerate the HV Battery unit. Excessive heat may melt the unit cover and cause the leakage of alkaline electrolyte resulting in fire or explosion.

If there is anything that you do not understand or is unclear, contact Hino Motors Sales U.S.A., Inc. (HINO Distributor).



WARNING

Precautions to Remove the HV Battery from the HINO 195H Series

1. The HINO 195H Series is equipped with a HV Battery, which produces high voltage electricity of approximately 288V. The HV Battery is composed of Nickel Metal Hydride (NiMH) battery packs.

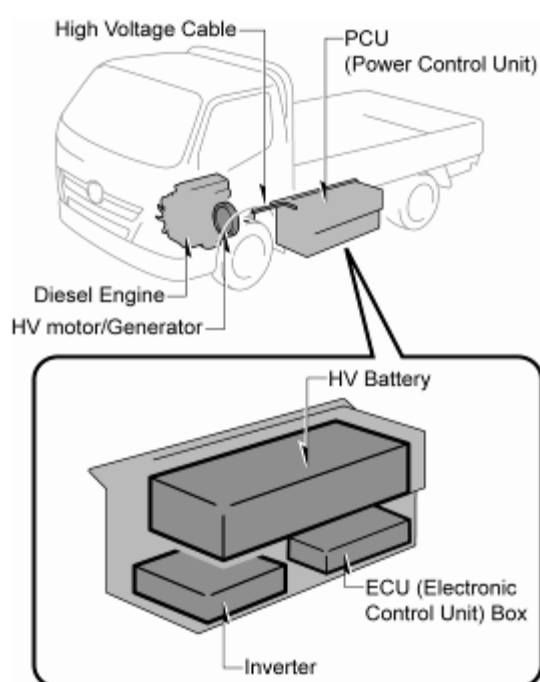
ALWAYS remove the HV Battery when dismantling or scrapping the vehicle, to prevent death or serious injury such as severe burns or electric shock.

2. NEVER use heavy machinery to remove the HV Battery, or the electricity may be discharged. If the electricity is discharged, there is a possibility of fire or accident due to alkaline electrolyte leakage, which may result in death or serious injury such as severe burns or electric shock.

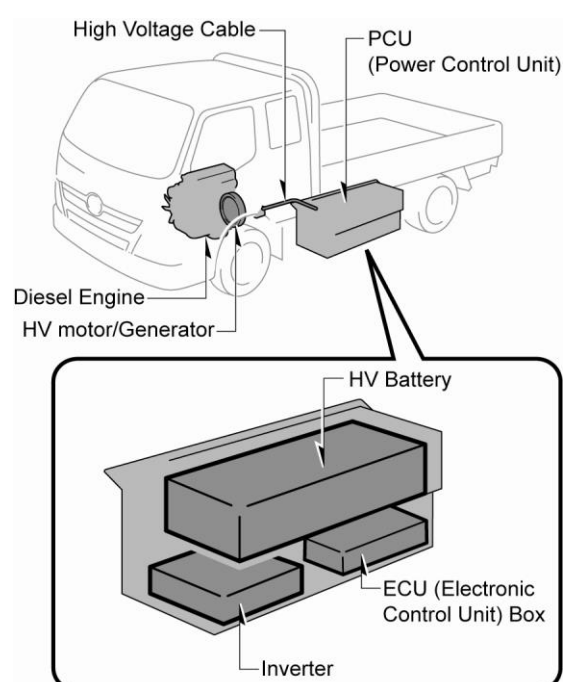
* Dispose of the auxiliary lead-acid battery in the same manner as disposal of lead-acid batteries in non-hybrid vehicles.

Composition of the Hybrid System

Single Cab



Crew Cab



 WARNING

ALWAYS observe these precautions in handling the HV Battery.

1. Remove the Service Plug of the Hybrid System. (See **Chapter 4: Proper Procedure for Removal of the HV Battery Unit**)

ALWAYS remove the Service Plug with the ignition shut off and with the ignition key removed before starting any work.

NEVER begin working on high-voltage components and cables without first removing the Service Plug. Failure to remove the Service Plug could result in death or serious injuries.

2. Never resell, give or transfer the used HV Battery to anyone other than the HINO Distributor or its authorized transporter.

HINO Distributor will arrange to pickup used HV Batteries to prevent any accidents being caused by used Hino HV Batteries. Contact details of HINO Distributor are shown on page 8.

A serious accident may result from the use of a used HV Battery that is not properly disposed of, especially if someone touches the high-voltage portion of the HV Battery unknowingly.

Examples of improper disposal of HV Batteries that may result in accidents, death or serious injury include the followings;

- (1) The HV Battery may be improperly abandoned or dumped, and someone may touch the high-voltage portion of the HV Battery unknowingly and suffer electric shock.
- (2) The HV Battery may be improperly reused for another purpose instead of for its intended purpose in the HINO 195H Series, and may cause accidents, such as electrocution, fire, explosion or leakage of the alkaline electrolyte, resulting in death or serious injury.

3. NEVER use the HV Battery for any purpose other than for use in the HINO 195H Series.

Hino Motors, Ltd. and HINO Distributor will not be responsible for any accidents caused by or in connection with any improper use, reuse, resale, transfer or disposal of the HV Battery.

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1. Foreword

The HV Battery unit is to be used for the HINO 195H Series as the power source for driving the vehicle. The HV Battery is composed of the Nickel Metal Hydride battery modules.

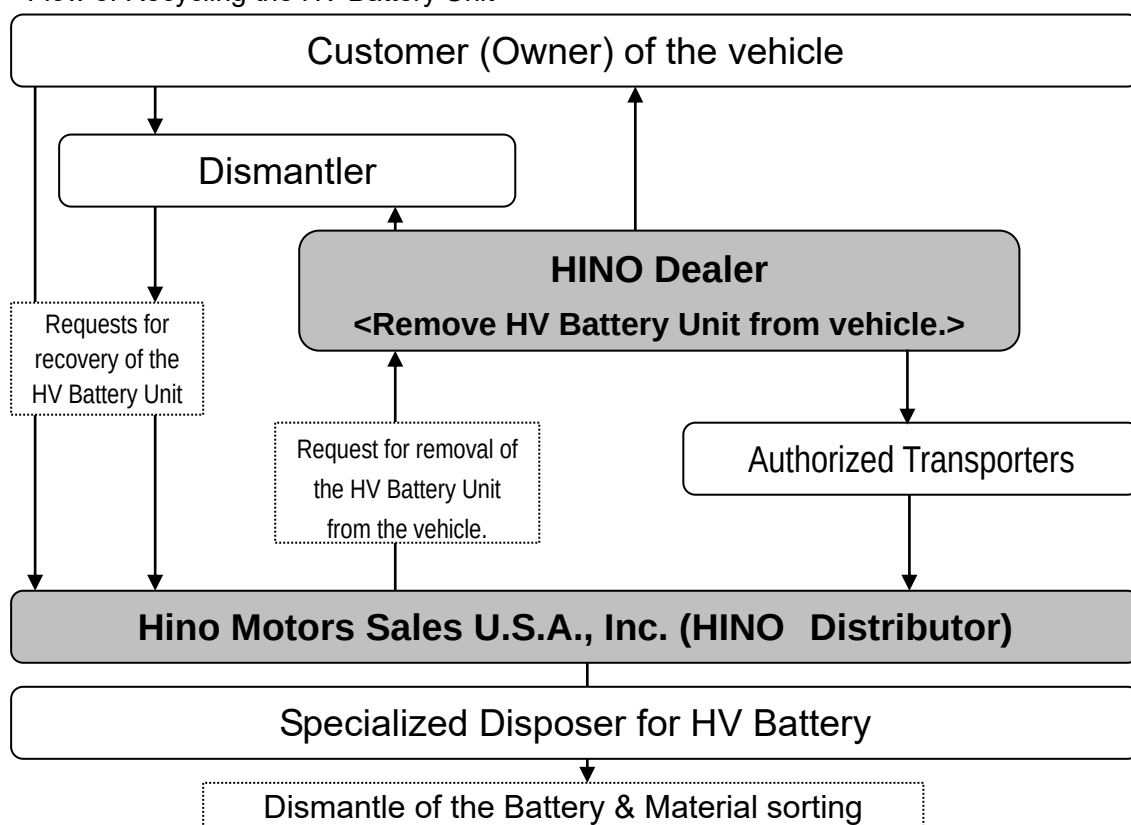
The HV Battery unit generates high-voltage (Approximately DC 288V) and is very heavy weighing approximately 80kg (177lb). Therefore, always follow safe operating procedures, precautions and warnings set forth in this manual.

2. Outline of the Recycling System for the HV Battery Unit

- 1) The HV Battery unit is a recyclable and also contains rare metals. The HV Battery unit is recovered by the HINO Distributor in the manner shown in the chart below. Once the HV Battery unit is recovered, it is recycled by the HINO Distributor.

 WARNING
Leakage of alkaline electrolyte may cause a fire or accident, resulting in death or serious injury such as severe burns or electric shock, if a scrapped vehicle is dismantled or crushed with heavy machinery without the HV Battery unit being first removed. ALWAYS remove and dismantle the HV Battery and deliver the dismantled HV Battery to HINO Distributor for recycling.

<Flow of Recycling the HV Battery Unit>



- 2) Hino dealers are required to perform and are responsible for the operations described below with regard to the recovery of HV Battery units
- (1) HINO Distributor may request regional Hino dealers to remove and recover a used HV Battery unit upon the request of either an owner of the HINO 195H Series or a dismantler.
 - (2) A regional dealer must comply with this request and remove and recover a used HV Battery unit from each designated vehicle.
(Before beginning the removal and recovery, a Hybrid technician of the dealer must carefully read this manual entirely including chapter 3 "Precautions for Handling HV Battery Unit".)
 - (3) Establishing the recovery date for the HV Battery unit.
HINO Distributor will advise the Hino dealer of the recovery date for the HV Battery unit after consultation with the Hino dealer.
 - (4) Each Hino dealer is responsible for the safe and proper storage of the removed HV Battery unit until it is picked up by the transporter.
 - (5) The Hino dealer shall deliver the removed HV Battery unit to the transporter for recovery on the date scheduled.

3. Precautions for Handling the HV Battery Unit



WARNING

Improper handling of the HV Battery unit may cause death or serious injury such as severe burns or electric shock. Follow the procedure described in this manual when removing the HV Battery unit.

1. ALWAYS wear insulating gloves and eye protector while working on the Hybrid System. Confirm that there is no crack, tear or any other damages to either of the gloves before using them.
Use the insulating gloves which have enough insulation performance for 500V or more.
2. NEVER carry any metal products, such as pens, scales, tools or anything else, which may be dropped and cause a short circuit or a spark while working.
3. NEVER touch any orange colored high-voltage cable and high-voltage equipment (Caution label applied) without wearing both insulating gloves.
4. NEVER cut or open any orange colored high-voltage cable.
5. ALWAYS shut off the ignition and remove the key from the ignition.
6. ALWAYS wait for more than 7 minutes after removing the Service Plug so that the electricity in the system will be completely discharged before working on the high-voltage system. Keep the removed Service Plug in your pocket to prevent accidental reinstallation by another person while you are working on the HV Battery unit.
7. ALWAYS measure and confirm the voltage of any high-voltage terminals to be "0V" with a tester, when it is necessary to touch any cable without insulating coating.
8. NEVER cause any shocks which may damage the HV Battery unit.
(Pressing, dropping or hitting the HV Battery unit with a forklift or any similar action.)
9. ALWAYS apply electric insulating tape on the terminals and connectors of the removed HV Battery unit with insulating gloves on.
10. NEVER remove the HV Battery unit from the vehicle using any procedure which is different from that described in this Manual.
11. ALWAYS keep the removed HV Battery unit away from fires. NEVER heat the unit.
12. ALWAYS keep the removed HV Battery unit away from the rain, snow or any other source of liquid.

In the event that the vehicle or the HV Battery unit is damaged, there may be leakage of the alkaline electrolyte from the HV Battery.

If there is leakage of the alkaline electrolyte, NEVER touch the vehicle. Immediately contact HINO Distributor for consultation regarding the use of correct procedure.

- 1) If there is liquid around the damaged HV Battery unit due to an accident, the liquid may be its electrolyte, which is a strong alkaline solution. In such a situation, the following items are necessary, as well as the general tools and special service tools (refer to the next chapter for details), for handling the Hybrid System. Prepare them before working on the Hybrid System. For detailed information, please contact HINO Distributor.

- Insulating Gloves
- Eye Protector
- Boric Acid Powder (28.3 ounces / 800g)
- Red Litmus Paper

- 2) NEVER use a hot torch, such as a gas cutting torch, or any other heated cutting device while removing the HV Battery unit.

If there is liquid around the HV Battery unit, put on insulating gloves and the eye protector and confirm the nature of the liquid with a red litmus paper. If the litmus paper changes color from red to blue, neutralize the liquid with a saturated solution of boric acid, as described below, until the color of the litmus paper does not change and remains red.

* Both red Litmus paper and boric acid powder should be purchased and made available in advance.

* A saturated solution of boric acid can be made by dissolving 28.3 ounces (800g) of boric acid powder in 5.3 gal. (20L) of water. Dispose properly the surplus solution of boric acid, by diluting it with plenty of water.

<NOTE>

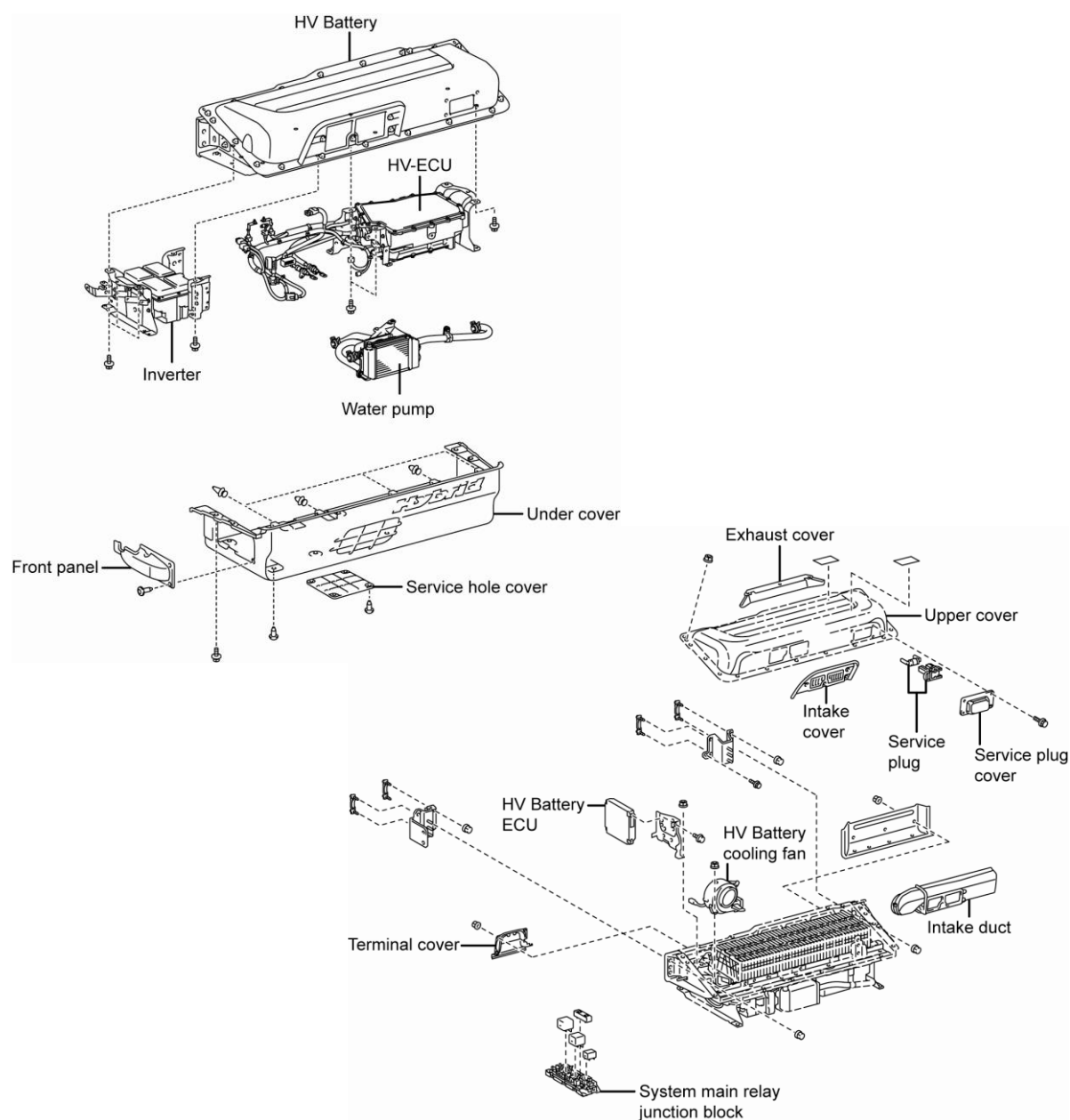
- When working on the leakage of the alkaline electrolyte, work outside with the wind at your back, or if the work must be done indoors, work in a well-ventilated area or room.
- If the alkaline electrolyte comes into contact with the skin, immediately flush with saturated solution of boric acid or plenty of water or normal saline. If the electrolyte comes into contact with your clothes, take it off immediately.
- If the alkaline electrolyte gets in your eyes, call for help, flush with plenty of water without rubbing, and get a diagnosis from a medical specialist as soon as possible.

4. Proper Procedure for Removal of the HV Battery Unit

[TOOLS]

- Insulating Gloves
- Eye Protector
- Boric Acid Power (28.3 ounces / 800g)
- Red Limits Paper
- Insulated tools
- Insulating Tape
- Electrical Tester
- Engine lifter

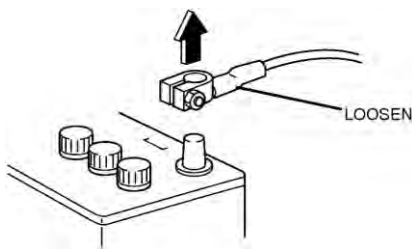
[COMPONENTS]



 WARNING

- ALWAYS wear insulating gloves and eye protector while working on the HV System.
- ALWAYS remove the Service Plug before working on the HV Battery unit. The Service Plug is intended to shut off the circuit of the HV Battery unit mechanically and to open the circuit electrically by means of the ignition switch.
- ALWAYS wait for at least 7 minutes after removing the Service plug, so that the electricity in the condenser of the HV System will be completely discharged before working on the system.
- ALWAYS measure and confirm with a tester that the voltage of any high-voltage terminal is "0V", when it is necessary to touch the cable without an insulating coating.
- ALWAYS use insulated tools for removing the HV Battery.

1. SHUT OFF THE IGNITION AND REMOVE THE KEY

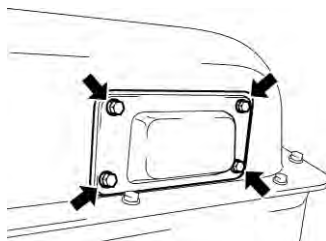


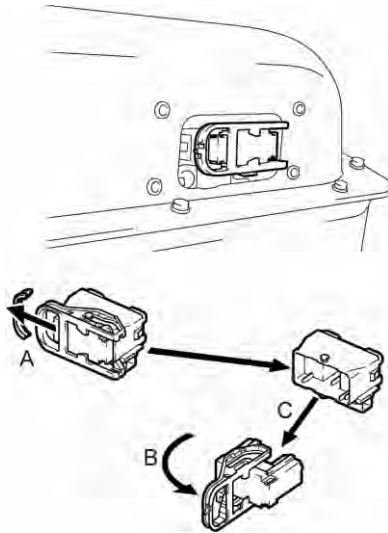
2. DISCONNECTING THE AUXILIARY BATTERY

- (1) Disconnect the cable from the auxiliary battery negative terminal.

3. REMOVING THE SERVICE PLUG COVER

- (1) Remove the bolts (4 pcs.) to remove the service plug cover.





4. REMOVING THE SERVICE PLUG

Warning:

ALWAYS wear insulating gloves and eye protector for the following procedure to remove the service plug from the HV Battery Unit.

- (1) Slide the lever to the direction A.
- (2) Lift up the lever to the direction B. Then pull out the service plug to the direction C.
- (3) Apply insulating tape to the connector of the harness to insulate it.



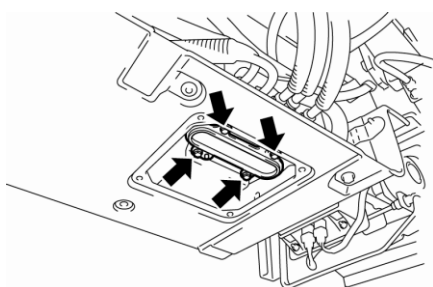
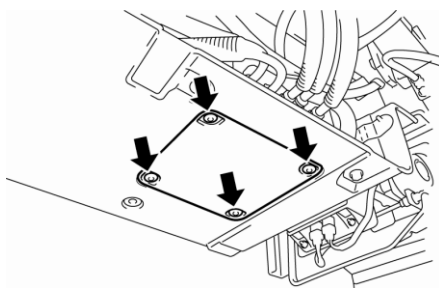
CAUTION

To prevent another engineer from reconnecting the service plug you disconnected, carry that plug around with you in your pocket.

5. DISCONNECTING THE MOTOR CABLE AND 24V POWER CABLE.

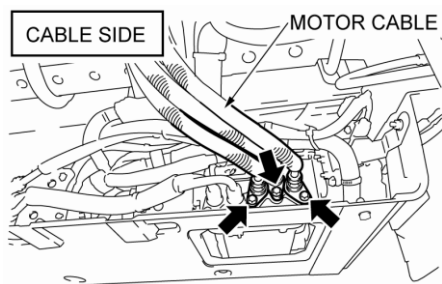
Warning:

ALWAYS wait for at least seven (7) minutes after removing the service plug, so that the electricity in the condenser of the HV System will be completely discharged before working on the system.

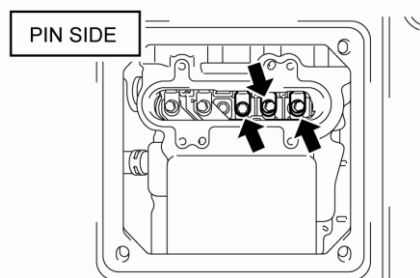


- (1) Unfasten clips (4 pcs.) to remove the service hole cover of the under cover.

- (2) Remove the bolts (4 pcs.) and remove the inverter terminal cover.

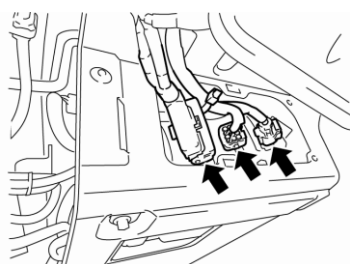
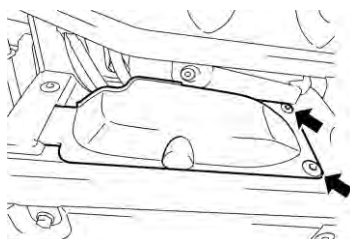
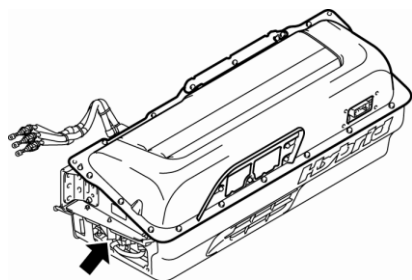


- (3) Remove the bolts (6 pcs.) and detach the motor cables (3 locations).

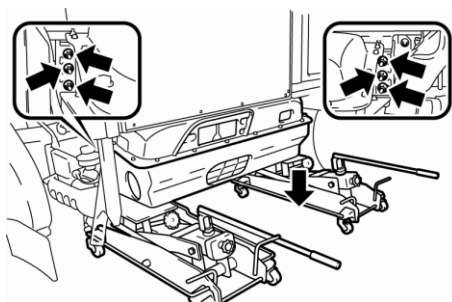


6. DISCONNECTING THE CONNECTOR OF THE PCU HARNESS.

- (1) Unfasten the clips (2 pcs.) and remove the front panel of the PCU.

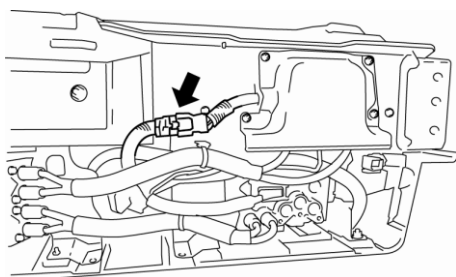


- (2) Disconnect the connectors (3 locations).
(3) Apply insulating tape to the connector.



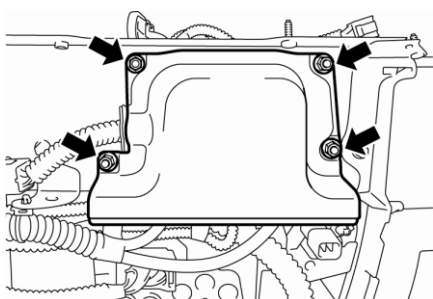
7. REMOVING THE PCU.

- (1) Set the engine lifter under the PCU.
- (2) Remove the nuts (6 pcs.) and pull the PCU forward using the engine lifter.

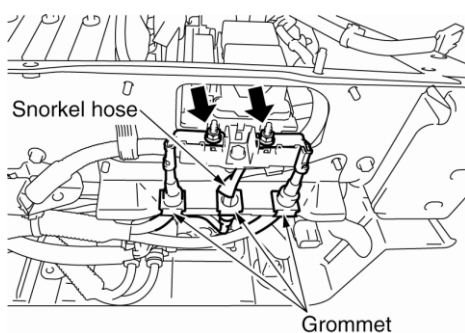


8. DISCONNECTING PCU HARNESS.

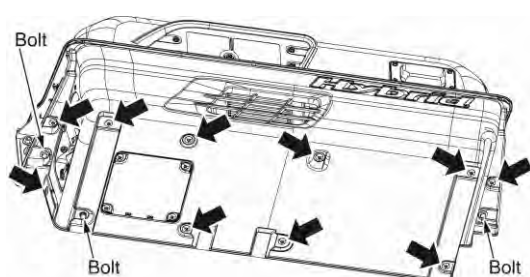
- (1) Disconnect the connector clamp and connector.
- (2) Apply insulating tape to the connector of the harness to insulate it.



- (3) Unfasten the nuts (4 pcs.) and remove the terminal cover.

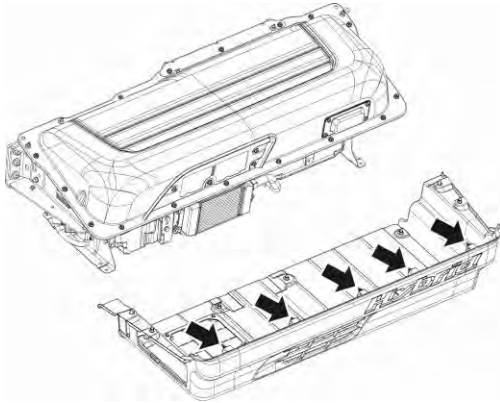


- (4) Unfasten the nuts (2 pcs.) to disconnect the harness.
- (5) Disconnect the hose clamp of the snorkel hose.
- (6) Disconnect the grommets (3 locations).



9. REMOVING THE UNDER COVER OF THE PCU.

- (1) Remove the bolts (3 pcs.) and clips (10 pcs.).



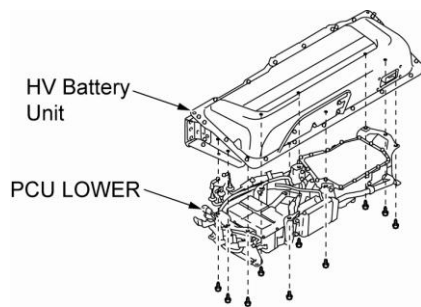
- (2) Pull the under cover forward, and remove the clips (5 pcs.) and under cover.

NOTICE

Clips (5 pcs.) inside the under cover are not reusable.

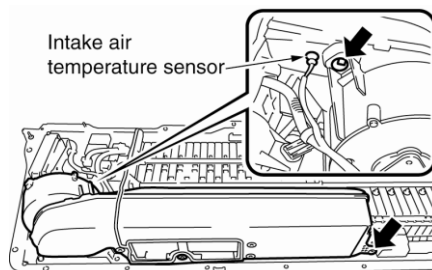
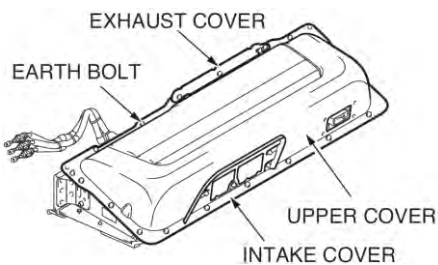
10. REMOVING THE BOTTOM OF PCU.

- (1) Unfasten the bolts (10 pcs.) and remove the bottom of PCU.

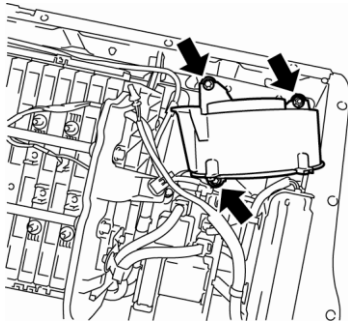


11. REMOVING THE HV BATTERY COOLING FAN FROM THE BATTERY CARRIER.

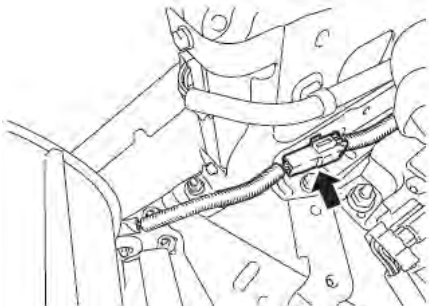
- (1) Remove the Intake Cover, Upper Cover and Exhaust Cover.



- (2) Disconnect the intake air temperature sensor.
- (3) Unfasten the clips (2 pcs.) and remove the intake duct.



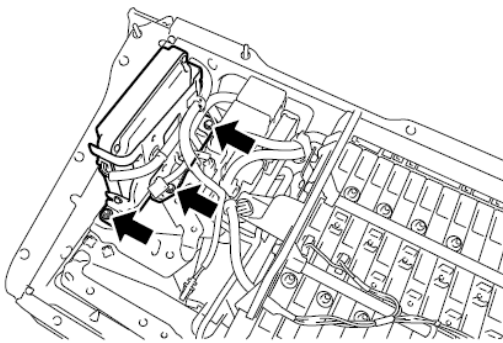
- (4) Unfasten the bolts (3 pcs.) and nuts to remove the HV battery cooling fan from the battery carrier.



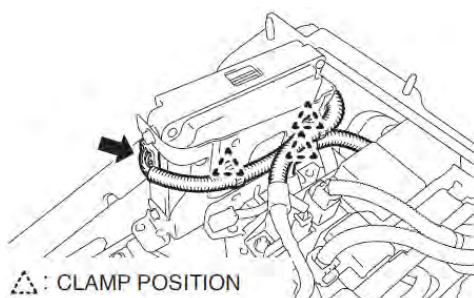
- (5) Disconnect the connector and connector clamp, and remove the HV battery cooling fan.

12. REMOVING THE HV BATTERY ECU FROM THE BATTERY CARRIER.

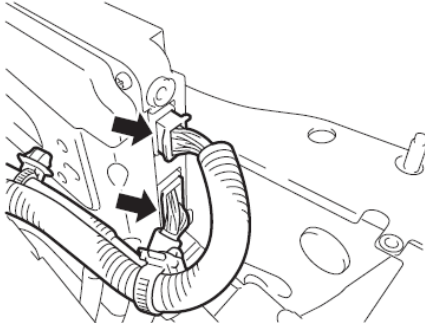
- (1) Unfasten the nuts (3 pcs.), and move the HV battery ECU assembly.



- (2) Disconnect the connector and harness clamps (3 locations).



- (3) Disconnect the connector (2 locations), and remove the HV battery ECU assembly.

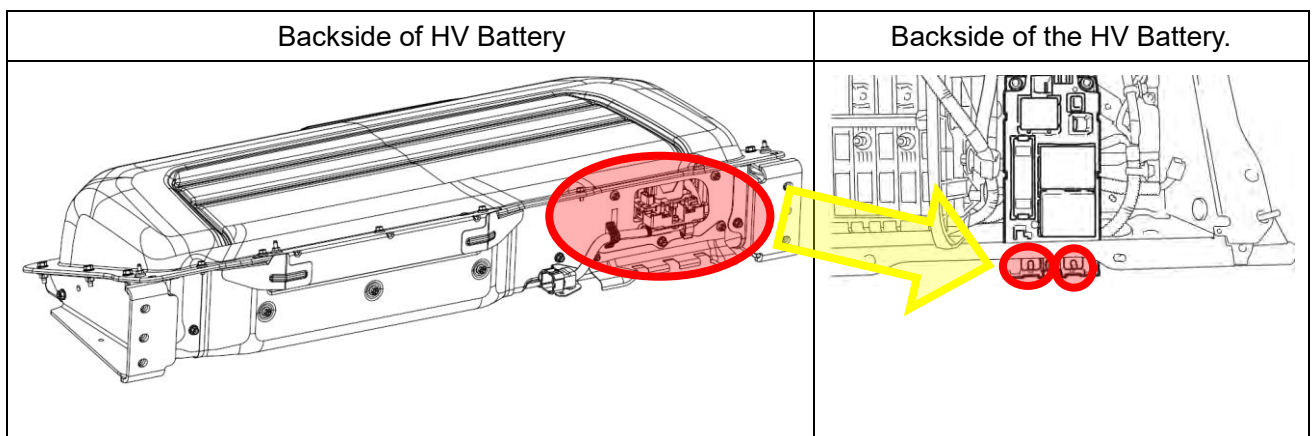
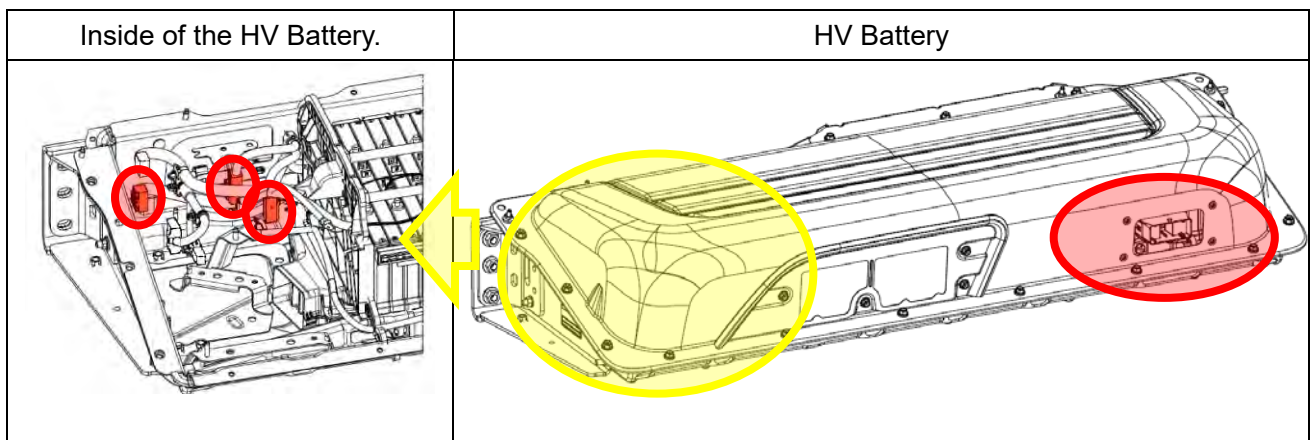


5. Packaging the HV Battery Unit

<Required Manner for Packing>

- (1) Cover the electrical connectors with electrical insulating tape for insulating them.

The connectors marked with a red circle (●) must be covered by Insulating tape.



- (2) Indicate "Service Plug Removed" in writing on the HV Battery unit.
- (3) Please reuse the cardboard box of new PCU for transporting the removed HV Battery to HINO Distributor. Consult HINO Distributor if the designated cardboard box is not at hand.

