

## **Service News**

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PEUGEOT Services Technical News

DCFP N° DENP N° PMC N°

ACTIVITIES:		<b>INFORMATION TO BE SENT TO:</b>	
х	New Vehicle Distributor	x Sales Manager	
x	Parts Distributor	× Part	s Manager
х	Authorised Repairer	× Serv	ice Manager

INTERNAL DISTRIBUTION TO BE CARRIED OUT BY THE DEALERSHIP

## SUBJECT: 3008 HYbrid4 vehicles – procedures to follow with accidentdamaged or broken down vehicles

## Main information / Key points:

This Service News, intended particularly for the **emergency services (e.g. fire, police, ambulance)**, presents the safety advice and the procedures to follow when intervening on an accident-damaged or immobilised HYbrid4 vehicle.

Failure to observe these instructions and the safety advice may lead to serious injuries and/or serious damage to the vehicle, in particular because of the risk of electric shocks from the high voltage of the traction battery.

Please ensure that this information is forwarded to local emergency services as well as breakdown and recovery companies if necessary.





## Introduction

This manual provides the safety instructions which must be followed when recovering occupants from a vehicle after an accident, or a breakdown causing immobilisation of the vehicle. It also describes how to handle the vehicle.

It is not the purpose of this document to prepare the vehicle for repair. Refer to the after sales technical documentation for this.

Failure to follow these instructions and particularly a lack of understanding of the dangers and precautions to take may cause serious injuries such as electric shock, because of the high voltage battery present on the 3008 HYbrid4.

Please read and understand this manual for your safety and the safety of the occupants of the vehicle.

Throughout this manual the words WARNING, CAUTION and NOTE appear. They are there to draw your attention to particular points. Failure to follow these instructions may cause serious injuries, or damage to the vehicle.

## WARNING

Indicate the strong possibility of serious injury or death if the instruction is not followed.

## **▲** CAUTION

Signifies a risk or action that is not safe and could lead to minor injuries or damage to the vehicle.

NOTE: gives useful information.

\*: indicates optional equipment, which may differ according to model; refer to the sales brochure.

PSA Peugeot Citroën reserves the right to make changes to the design and specifications and/or to modify or improve the product without obligation to apply these changes retrospectively to previous versions.

Please note that the content of this manual may differ slightly from a given vehicle due to changes in vehicle specifications.



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## 1. About the Peugeot 3008 HYbrid4

The Peugeot 3008 HYbrid4 is a vehicle that has a similar appearance to that of the standard Peugeot 3008 launched in 2008. It however differs from the latter by combining a Diesel engine with an electric motor. The Diesel engine drives the front wheels while the electric motor drives the rear wheels.

The Diesel engine operates on Diesel fuel, whereas the electric motor uses electrical energy supplied by a high voltage traction battery.

## (1) Internal features allowing identification of a 3008 HYbrid4

The features that allow the vehicle to be identified compared to the non-hybrid version:

• Centre console

The centre console is fitted with a dial that allows the driver to select the desired drive mode:

**Auto**: Mode that optimises the use of the sources of energy

**Sport**: This mode provides a more dynamic driving style with additional performance

**ZEV**: "Zero emissions vehicle" operation is provided by 100% electric drive **4WD**: 4 wheel drive mode

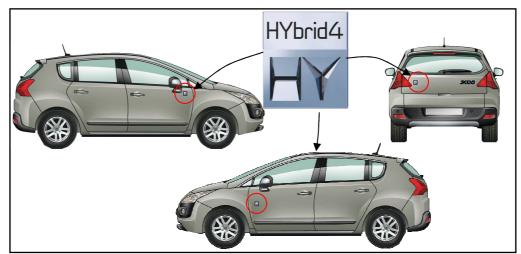
• Instrument panel

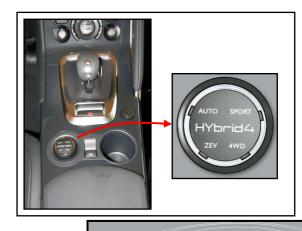
The instrument panel has a special meter that allows the driver to see the total power used (by combining electric and Diesel) in real time.

## (2) External features allowing identification of a 3008 HYbrid4

An external badge allows direct identification of a 3008 HYbrid4. It is fitted just forward of the left and right hand door mirrors, as well as at the back of the vehicle on the tailgate.

Badge

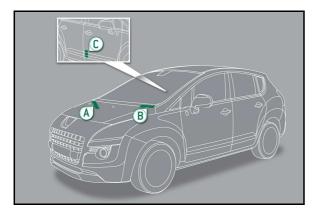






• Vehicle Identification Number (VIN)

The VIN has a characteristic that enables a 3008 HYbrid4 to be identified. The 4<sup>th</sup> character of the VIN is an H, as in the following example: VF3HURHC8BS041681. The vehicle's VIN is visible in the following places:



## A. Under the bonnet.

The VIN is engraved on the body near the damper support.

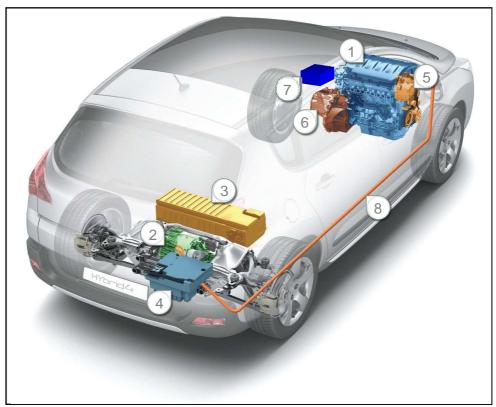
## B. At the bottom of the windscreen.

The VIN is on a label visible through the windscreen.

## C. Manufacturer's label.

The VIN is on a self-destructive label in the right hand door aperture.

## 2. Information on the electrical system in the vehicle



(1) Location and description of the main units



	Component	Location	Description
1	HDi Diesel engine	Under the bonnet	Conventional HDi engine driving the front wheels of the vehicle and providing most of the vehicle's drive requirements.
2	Electric motor	Rear axle	Drives the vehicle's rear wheels either in parallel with the Diesel engine, or on its own. It also assures the energy recovery function, the recharging of the batteries during phases of deceleration of the vehicle and is active up to 75 mph (120 km/h).
3	High voltage battery (Ni-MH)	Rear axle	Supplies energy to the electric motor. The 200 V Ni-MH (Nickel Metal Hydride) traction battery is located under the boot floor, close to the electric motor. It cannot be charged from an external mains supply.
4	Electronic power controller	Rear axle	The electronic power controller automatically manages the various operating modes of the two motors (Diesel and electric). An inverter and a transformer are needed to manage the electrical power. The inverter acts on the torque of the electric motor by regulating the current from the high voltage battery pack. Its operating range is between 150 and 270 volts. The transformer converts the 200 V of the battery pack to 12 V to supply the vehicle's systems.
5	Stop & Start system	Under the bonnet	A system that allows the internal combustion engine to be stopped in defined operating conditions.
6	Electronically controlled manual gearbox	Under the bonnet	
7	12V battery	Under the bonnet	Conventional battery supplying the vehicle's on-board systems. It is charged automatically by the high voltage network.
8	High voltage cables	Right hand underbody	

## (2) Specification of the Ni-MH battery

The high voltage battery is of the Ni-MH (Nickel - Metal Hydride) type. It is located at the rear of the vehicle in the boot floor.

Nominal voltage of the Ni-MH battery	200V
Weight of the Ni-MH battery	50 kg
Volume of the Ni-MH battery	50 L
Power rating of the Ni-MH battery	31 kW

The dangers associated with the Ni-MH battery are explained in the section <u>Precautions to take at</u> the site of the accident

## (3) Safety measures associated with high voltage

The following measures ensure safety when associated with high voltage:

Isolation The high voltage circuit is isolated from the vehicle's body		
Reduction of the risk of electrocution	All of the high voltage units are inside housings, and the high voltage cables to them are orange in colour.	
Identification	The high voltage components are identified with a "WARNING" label as shown on the next page. The housings for these components are isolated from the high voltage.	
Connectors	All of the connectors associated with high voltage are IP2X rated.	



## (4) Warning labels

• Under the bonnet



The presence of High Voltage electricity is indicated by orange labels. The presence of potential dangers is indicated by yellow labels.

• On each unit



## (5) Systems for cutting off the high voltage

The high voltage can be disconnected in the following ways:

Service connector	Positioned under the boot floor, this shunt cuts off the high voltage supply from the traction battery when it is manually removed.
Ignition key	The ignition key allows the high voltage supply from the traction battery to be cut off.
Emergency cut-off system	In the event of a collision (airbag deployment, etc.) or certain system failures, this system cuts off the high voltage supply from the traction battery.
Circuit breaker	Cut-off when the 12V battery is disconnected.



## (6) Description of the sensitive points

## FRONT ZONE (under the bonnet)

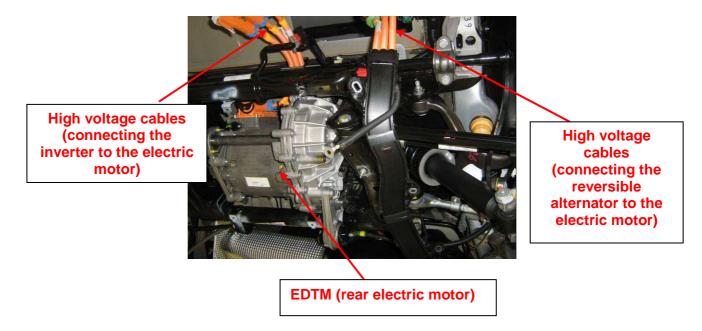
High voltage electricity flows between the high voltage traction battery, the HPCU (inverter) and the BASM (reversible alternator) located under the bonnet. The power cables are routed under the bonnet **in a conduit** and are **orange** in colour.



BASM (high voltage reversible alternator)

## REAR ZONE (under boot load floor)

High voltage electricity flows between the high voltage traction battery, the HPCU (inverter) and the EDTM (rear electric motor) located between the rear wheels. The power cables are routed under the bonnet **in a conduit** and are **orange** in colour.





## 3. Safety measures related to high voltage electricity

As the 3008 HYbrid4 has a 200V system, it is necessary to isolate and disconnect the vehicle's high voltage supply to avoid any electrical risk before handling the vehicle.

## (1) Tools and equipment necessary

Items	Purpose
Insulated personal protective equipment: 1. Insulated rubber gloves 2. Hard hat 3&4. Jacket and trousers (recommended) 5. Boots with rubber insulated soles	Protection against electrical risks for operations in contact with the high voltage system
Mask, solvent-resistant gloves, protective face mask	To be used when there is a leak of electrolyte from the traction battery
Absorption mat, sand	To soak up leaks of electrolyte, oil or petrol
Fire extinguisher	A fire extinguisher compatible with inflammable liquids is required; powder or CO <sub>2</sub>
Plastic insulating tape	To insulate the electrical system and tools if they are damaged

## (2) Precautions while rescuing occupants

## WARNING:

Handle the vehicle in line with the instructions supplied in this manual to reduce the risk of injury by electric shock.

Points to note:

This vehicle uses a 200V high voltage system. In the event of an accident there could be a leakage of current. High voltage electricity may be present in components that in principle are not connected to the high voltage system (body of the vehicle or other metal components).

- 1) This is why Personal Protective Equipment (PPE) must be used when handling the vehicle including an organic solvent mask, solvent resistant gloves and eye protection care must be taken.
- 2) The design of the high voltage battery reduces the risk of a leak of electrolyte if damaged.



## 4. Steps to take in an emergency

Follow the recommendations below when handling a vehicle at the site of the accident:

## (1) Identify the vehicle

Use the information supplied in the section *About the Peugeot 3008 HYbrid4* to ensure that the vehicle is indeed a 3008HY4.

## (2) Use Personal Protective Equipment

Ensure that you are equipped with the required equipment as described above.

## (3) Precautions to take at the site of the accident

## WARNING :

Do not touch exposed or disconnected high voltage cables, damaged protective covers or high voltage components.

If it is necessary to touch these items ensure that you are wearing the protective equipment described in this document to avoid any electrical risk. Cut off the high voltage supply following the steps defined in

Procedure for handling the vehicle.

## WARNING :

Before doing anything on the vehicle, switch off the ignition (**Ready** lamp off) to avoid the risk of injury resulting from automatic restarting of the engine. See <u>Procedure for disconnecting the</u> battery.

## WARNING :

The hybrid system may be active even if the vehicle is making no noise. Check that the **Ready** lamp is off to ensure that the system has been switched off.

## WARNING :

If you find fluid that has leaked from the traction battery, this fluid may contain electrolyte. Wear an organic solvent mask, solvent resistant gloves and eye protection, then soak up the fluid using sand or an absorbent mat. Electrolyte is light in colour, transparent with a slight odour. Its viscosity is similar to water.



## PEUGEOT

## WARNING :

In the event of an impact in the high voltage battery area (impact causing a significant reduction in the boot volume or piercing of the body), there is a chemical risk related to the components of the battery and the electrolyte in particular.

Electrolyte is an aqueous solution that has little odour or colour and is corrosive.

In the event of a leak of electrolyte :

- Do not touch the liquid
- Wear Personal Protective Equipment (latex gloves further pairs if contact is prolonged), a closed work coat and safety glasses
- Mop up the electrolyte using a disposable cloth and discard this in a suitable waste bin
- As far as possible, clean the contaminated area with water; do not discard water contaminated with electrolyte into the drains or the environment

In the event of :

- Contact with skin or eyes, wash copiously with water for 15 minutes
- Ingestion : do not try to vomit, drink copious amounts of water
- Inhalation: breathe fresh air

Contact a doctor.

#### NOTE :

Other vehicle fluids (brake fluid, engine coolant, screenwash fluid, etc.) are the same as those used on conventional vehicles.

#### WARNING :

In the event of a malfunction, a mixture of gas may form and accumulate inside the battery cells. Each cell has relief valve that opens when a pressure of 20 bar is reached, so avoiding any risk of explosion of the battery resulting from excess pressure. Once free, the gas passes through the battery cooling circuit; there is no separate gas exhaust circuit.

The main constituent of the gaseous mixture is dihydrogen (H2). In the presence of dioxygen (O2) and a source of ignition, this can :

- catch fire if the concentration is between 4 and 75 % by volume
- explode if the concentration is between 13 and 65 % by volume

The precautions to take to avoid fire or explosion if the release of gas cannot be avoided consist of ventilation and aeration, and then to keep away any source of ignition (flames, sparks) if a leak of gas is suspected.

If there is a possibility that high voltage components or cables are damaged, switch-off the high voltage system following the instructions described in the section <u>Action if there is no visible</u> <u>damage</u>.

#### WARNING:

Do not leave the vehicle without surveillance if the vehicle has not been made safe for bystanders. When the emergency actions have been completed and the occupants have left the damaged vehicle, inform bystanders of the potential danger represented by the vehicle by installing an explicit "High Voltage" sign (see the example given at the end of this document).

## (4) Preparation: Immobilising and stabilising the vehicle

The vehicle has an electric parking brake.

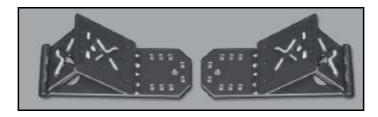
To check on the state of the parking brake, the following warning lamp is on if the parking brake has been applied:





If the vehicle is not immobilised by the electric parking brake, place chocks in front of and behind one of the front wheels.

See the Peugeot 3008HY4 handbook for the location of the wheel chocks.

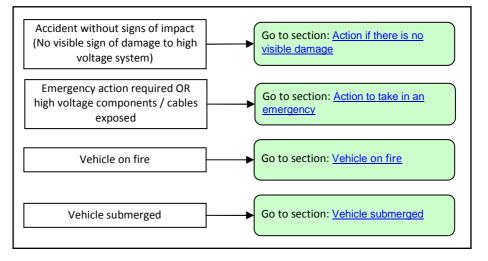


WARNING :

Do not place the chocks under high voltage components under the vehicle which might have been damaged (e.g. high voltage cables)

## (5) Check the state of the vehicle

Use the diagram below to determine the instructions to follow:



## 5. Procedure for handling the vehicle

#### WARNING :

Wear PPE (Personal Protective Equipment - insulated gloves, insulated boots rated at 200V at least) if contact with the vehicle body is possible. Mishandling could introduce an electric risk for occupants of the vehicle and emergency services.



## (1) Action if there is no visible damage

WARNING : Where an orange cable or a high voltage component is exposed, refer to

Action to take in an emergency If the vehicle has to be cut open by the emergency services, refer to <u>Cutting the vehicle</u>

The objective is to make the vehicle safe to avoid any electrical risk, by disconnecting the high voltage supplied by the high voltage battery. This procedure will take about **10 minutes**.

- 1) Check that the vehicle is properly immobilised (see <u>Preparation: Immobilising and</u> <u>stabilising the vehicle</u>)
- 2) Switch off the system using the following procedure:
  - Switch off the ignition using the ignition key (see <u>Procedure for switching off the</u> ignition using the key)
- **3)** Wait at least 6 minutes before going to the next step, so as to ensure that all electronic control units have shut down
- 4) Open the bonnet
- 5) Disconnect the 12V battery (see <u>Procedure for disconnecting the battery</u>)

Wait 1 minute before going to the next step

## WARNING :

The SRS system (airbags) remains live for about 1 minute after disconnection of the electrical power. This means that during this period deployment of an airbag remains possible. If you carry out the next step without waiting for this period, there is a potential risk of serious injury from unintentional deployment of an airbag.

6) Remove the Service connector (see <u>Procedure for disconnecting the Service</u>)

This action isolates the high voltage of the traction battery. Wait 1 minute to allow the capacitors in the inverter to discharge naturally.

## WARNING :

The 200V battery is still live with the Service connector removed.

7) Start an action such as cutting the vehicle.

## WARNING:

If the Service connector is removed without following the correct procedure, this could cause burns because of the risk of short circuits in the vehicle.



## (2) Action to take in an emergency

If there is an emergency or if high voltage components or cables have been damaged, putting the vehicle into a safe electrical state is **very strongly recommended** before doing anything on or to the vehicle. Check over the whole vehicle to see if there are any damaged high voltage components or cables.

WARNING: The orange cables indicate high voltage.

- 1) Check that the vehicle is properly immobilised (see <u>Preparation: Immobilising and stabilising the vehicle</u>)
- 2) Switch off the ignition placing it in the "OFF" position (see <u>Procedure for switching off the</u> ignition using the key)
- **3)** Open the bonnet
- 4) Disconnect the 12V battery (see <u>Procedure for disconnecting the battery</u>)
- 5) Start an action such as cutting open the vehicle (for this, follow the instruction in <u>Cutting</u> <u>the vehicle</u>)

If it is necessary to remove glass or doors, the procedure is the same as for conventional vehicles.

6) Once the occupants are out of the vehicle, remove the Service connector for the high voltage battery (<u>Procedure for disconnecting the Service</u>)

## (3) Vehicle on fire

WARNING: Do not use a water fire extinguisher to put out the fire as this presents a danger.

In the case of a vehicle on fire, call the fire service immediately and then:

- 1) Check whether the high voltage battery is damaged or leaking
- 2) Start putting out the fire if possible

## Using a fire extinguisher

Use only a powder extinguisher (CO<sub>2</sub> type) on electrical equipment.

Tackle the fire from the front and avoid being at the left hand rear of the vehicle. The fire should be treated as a metals fire.

Risk of gas release from the battery.

#### WARNING:

The battery may release hydrogen, which will escape from the left hand rear of the vehicle. This is why you should avoid fighting the fire from this position.

## (4) Vehicle submerged

Start by checking the extent of the damage.

If you find serious damage to the vehicle, if the high voltage battery is deformed, damaged or open, put on insulated protective equipment and avoid touching the vehicle.

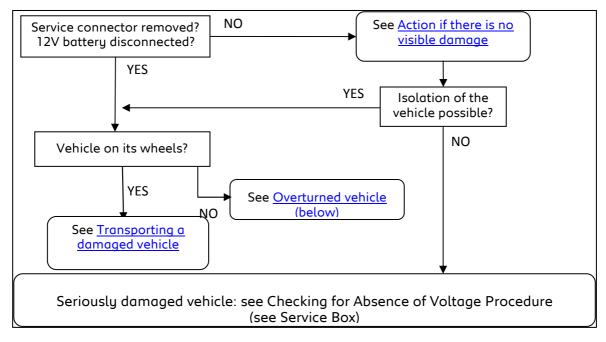
WARNING:

After pulling the vehicle out of the water, and evacuating water from the passenger compartment, carry out the procedures in <u>Action if there is no visible damage</u> while wearing PPE (Personal Protective Equipment).

As there is the possibility of hydrogen being produced in the battery for 72 hours after flooding, keep the vehicle outside in a well ventilated area with the windows open to avoid the risk of fire.



## 6. Procedure for transporting a damaged vehicle



## (1) Overturned vehicle

Check that nothing has been dropped onto the road and carefully put the vehicle back on its wheels, avoiding any contact with the high voltage cables

## (2) Transporting a damaged vehicle

You can drive the vehicle to transport it if the vehicle is not damaged. Do not drive it if:

- High voltage components or cables are damaged
- The electric motor, transmission, brakes, suspension or tyres are damaged
- Oil or coolant is leaking from the vehicle
- The READY lamp in the instrument panel is not on (after turning the ignition key to the start position, placing the gear lever in the "N" position and pressing down on the brake pedal)

If the **READY** lamp is off and/or a STOP warning lamp comes on, or if there is any abnormal noise, odour or vibration from the vehicle when driving, follow the procedures in <u>Action if there is no</u> <u>visible damage</u> up to disconnection of the Service connector.



## (3) Precautions when transporting a damaged vehicle

- Transport by a recovery truck
- WARNING:

If a damaged vehicle is towed with the rear wheels on the ground, this could cause a fire. This could be the result of a short circuit created by the electricity generated by the electric motor when the rear wheels are turning on the ground.

	Recovery procedure	Comments
PROHIBITED     Front wheels free		Never tow the vehicle with the front wheels free (towing by the wheels). Do not attach to exterior finishers, risk of damage.
RECOMMENDED		Procedure:
	Towing by the rear wheels	Before doing anything, switch off the ignition and place the gear lever in the <b>N</b> position.
		The vehicle can be pushed for a maximum of a few dozen metres.
	Recovery on a flatbed	The front and rear wheels must not be on the ground; use a flatbed to recover the vehicle. Use the towing eyes only to pull the vehicle out of its location or to pull it onto the flatbed.



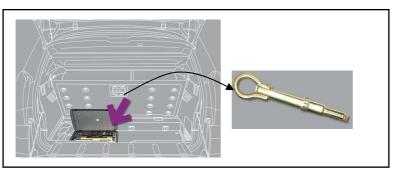
• Towing eye

Use the towing eye only to pull the vehicle out of its location or to pull it onto the flatbed.

**NOTE**: Use the anchorage provided for this purpose at the front of the vehicle. Attachment to any other part of the body or structure is prohibited (risk of damage to the bumper, anti-roll bar, etc.) The towing eye is screwed in through the bumper at the front right.

Procedure:

1) Take the towing eye from the tool kit located in the boot



2) Fit the towing eye to the right hand front of the vehicle



- 3) Install the towing bar
- **4)** Start the vehicle (READY lamp on in the instrument panel) or turn the ignition key to the on position
- 5) Put the gear lever in the N position
- 6) Release the parking brake
- 7) Switch on the hazard warning lamps on the towed vehicle

## NOTE:

Never tow the vehicle with the ignition switch in the off position. The steering column might lock.

## NOTE:

When towing with the engine off, there is no power assistance for brakes or steering.

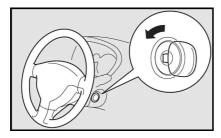


## 7. Detailed procedures

## (1) Procedure for switching off the ignition using the key

Always wear Personal Protective Equipment.

1) Switch off the electric motor by turning the key to "OFF"





The "READY" lamp must go off.

2) Remove the key

## (2) Procedure for disconnecting the battery

## CAUTION:

Before disconnecting the battery, wait 2 minutes after switching off the ignition.

The battery is located under the bonnet, under a cover.

The battery disconnection procedure is as follows:

- 1) Open the bonnet (interior release lever on the left, then exterior safety catch)
- 2) Secure the bonnet stay
- 3) The battery is on the right (viewed from the front)
- **4)** Remove the plastic cover for access to the battery terminals
- 5) Fully raise the locking lever to disconnect the battery + terminal



## (3) Procedure for disconnecting the Service connector

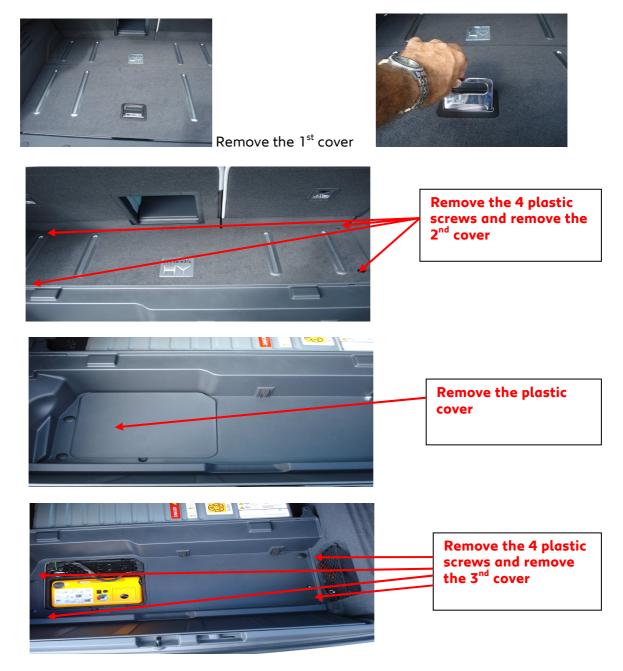
## WARNING:

Before removing the Service connector, ensure that the high voltage is switched off (ignition switch)
Wear PPE when removing the Service connector

Wedt PPE when removing the service connect

1) For access to it, in the boot :





- **2)** Disconnect the Service connector
  - Raise the lever of the Service connector
  - Disconnect the Service connector

## WARNING:

After removing the Service connector, take care to place it in a safe place so as to avoid the possibility of an unaware person refitting it by mistake.





## WARNING :

The orange shunt must be completely removed to isolate the high voltage and it must only be removed after all of the consumers (headlamps, heated rear window, etc.) are off.

## (4) Cutting the vehicle

The drawing below shows the zones to be aware of when cutting the vehicle.

## WARNING:

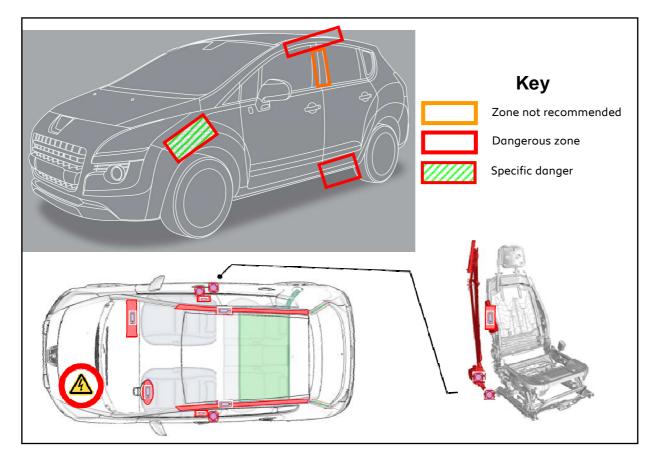
Ensure that you are wearing Personal Protective Equipment before starting the cutting operation.

#### WARNING:

Use a suitable machine that does not produce sparks, as these could cause serious injury to occupants of the vehicle and emergency services. Take account of the zones to be avoided indicated below before starting to cut the vehicle and avoid touching the orange cables (high voltage cables).

## WARNING:

## Never cut the traction battery itself.





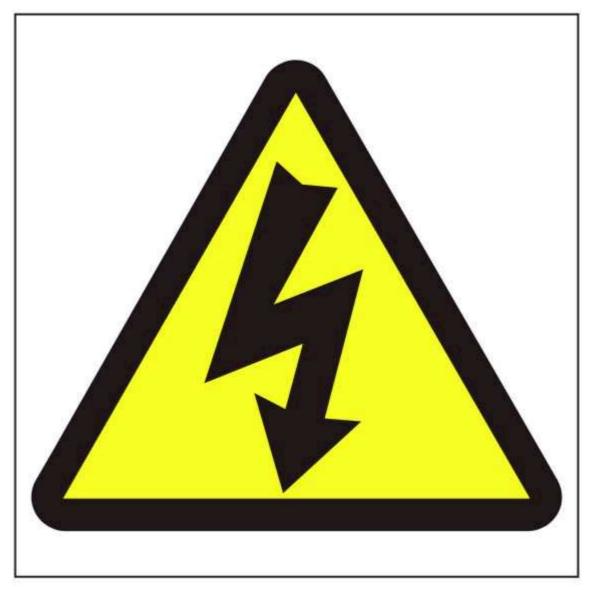
## 8. Safety of others

# HIGH VOLTAGE WORK IN PROGRESS! DANGER! DO NOT TOUCH

# HIGH VOLTAGE WORK IN PROGRESS! DANGER! DO NOT TOUCH

\*When working on the high voltage system, place this sign on the roof of the vehicle, folding along the dotted line.





It is recommended that a sign like the one above is used when working on a vehicle. The symbol used should meet local legislation on the subject in the country.



NOTES



2011-07

