Ferrari

296 GTB



EMERGENCY RESPONSE GUIDE

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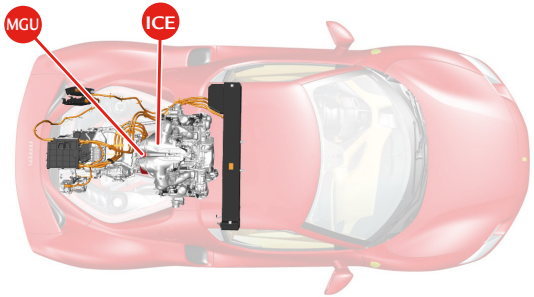
Introduction

The vehicle has a PHEV (Plug-in Hybrid Electric Vehicle) type hybrid RWD architecture at the rear only (where the internal combustion engine (ICE) is built into an electric traction motor placed at the rear) which is derived from Formula 1 and takes the name MGUK (Motor Generator Unit, Kinetic).

The electric traction motor and the internal combustion engine (ICE) communicate via a decoupling actuator (Transition Manager Actuator, "TMA") which allows both to be used at the same time. This actuator also allows exclusive use of the electric traction motor.

Using both the internal combustion engine (ICE) and the electric traction motor increases performance and reduces fuel consumption and emissions.

This guide provides the information required to act as safely as possible if this vehicle is involved in an emergency situation.



The emergency procedures for the 296GTB are similar to those for conventional vehicles with the addition of specific information related to the presence of high voltage components.

This guide also describes the procedure for deactivating the high voltage system in an emergency.

Warning

A failure to observe the procedures outlined here during an emergency response can result in severe burns or electric shocks which can also be fatal. Please read this manual carefully to fully understand the characteristics of this vehicle and act properly if it is involved in an accident.

By closely following the procedures indicated here, you will contribute to the success of any emergency response operations.

Warning

The 296GTB is equipped with a number of safety systems which have been designed to help protect your safety. These features help to ensure safe access to the vehicle under various conditions.

However, whenever you have to intervene on a damaged hybrid vehicle which has been involved in an accident or fire or in rescue or recovery situations, always assume that the vehicle's high voltage system is powered up.

How to identify the 296GTB

The aerodynamic lines of the 296GTB make it easy to identify. However, a collision may damage the vehicle and make identification difficult. In these circumstances, the emergency response personnel must visually inspect the vehicle to ascertain whether high voltage components are present.

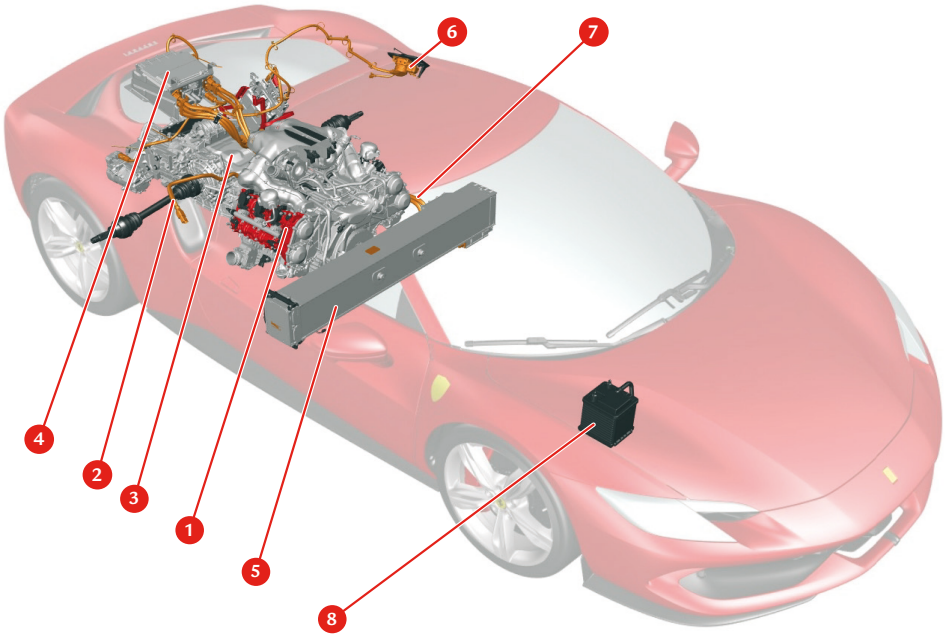


The wording “HYBRID VEHICLE” under the chassis number on the left hand side of the windshield indicates that the vehicle is equipped with a high voltage hybrid system.

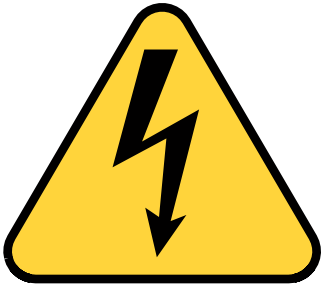


Hybrid system components

1. Internal combustion engine (ICE)
2. Gearbox with electronic differential (E-Diff)
3. Rear electric traction motor (MGUK)
4. Rear power electronics (inverters)
5. High voltage battery
6. High voltage and 12V battery charging socket
7. High voltage connector cables
8. 12V lithium ion battery



Hybrid system precautions



The symbol shown above identifies the vehicle high voltage electrical parts that may put your safety at risk.

Important note

The high voltage system is energized when the instrument panel is activated (KEY-ON).

Important note

The vehicle remains energized (HV battery terminals closed) even after deactivating the instrument panel (KEY-OFF).
To deactivate the high voltage system (HV battery terminals open) the HV service connector must be used (see page 7).

Warning

In addition to a conventional 12V electrical system, the vehicle also has a 330 volt high voltage system.

High voltage is extremely dangerous and may cause serious burns and electric shocks which can result in serious or fatal injury.

Warning

Each component in the high voltage system is identified by a special label indicating a potential risk of electric shock. Cables in the high voltage system can be identified by an orange covering.

Warning

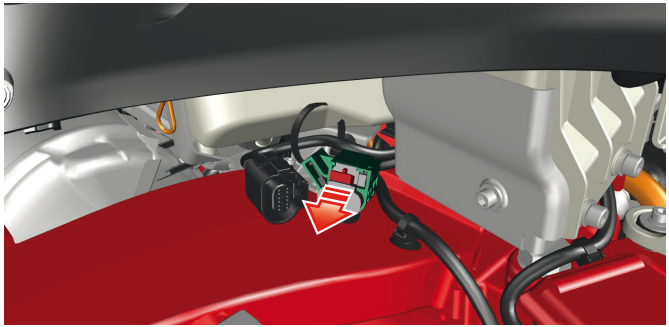
Risk of serious burns or electric shock resulting in injuries that can be fatal.

The high voltage electrical system and high voltage battery are dangerous and may cause burns, other serious injuries or death. Never attempt to remove or tamper with the high voltage cables (with orange covering), the high voltage battery, connectors or any other component in the high voltage electrical system, especially if it appears to be damaged.

Warning

A HV service connector switch is located on the RH side of the engine compartment and is designed to help enable qualified technicians to deactivate the high voltage system.

The HV service connector can only be used by qualified technicians who have the necessary training, experience, documentation and equipment to work safely.



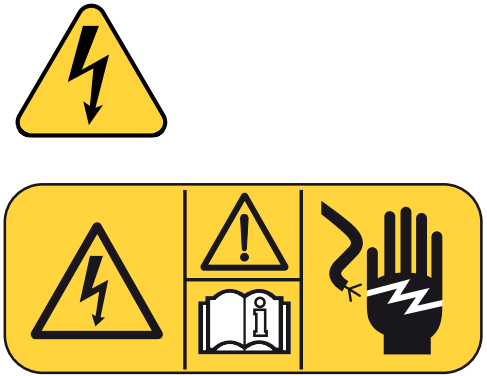
Warning

Never use or tamper with the HV service connector located on the RH side of the engine compartment.

High voltage caution labels

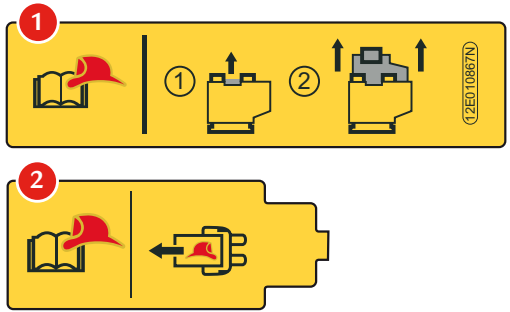
The vehicle has several types of labels (two examples can be seen below) which are useful for identifying the elements that may put your safety at risk.

These labels can be found on all the high voltage system components.



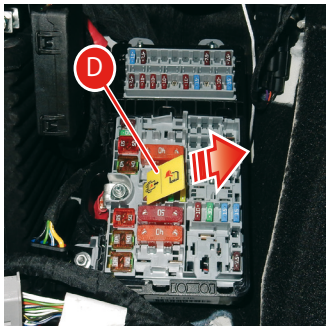
Labels relative to procedures for deactivating high voltage system

Located in the engine compartment, label (**1**) indicates the operations that must be performed to deactivate the high voltage system in an emergency using the HV service connector.



Label (2) is located on the high voltage fuse box in the 12V lithium ion battery compartment and indicates the operations that must be performed to deactivate the high voltage system in an alternative emergency procedure which involves disconnecting the fuse.

For further information on the alternative emergency procedure, see page 13.



Emergency response guide

Warning

NEVER assume that the vehicle system is not deactivated (KEY-OFF) simply because it does not make any sound.

Warning

A failure to deactivate the high voltage system before performing normal emergency response procedures can result in serious burns or electric shocks which can also be fatal.

To avoid the risk of severe injury, NEVER touch high voltage system cables, connectors or components with your bare hands.

Warning

If you have to touch a high voltage system cable, connector or component, always wear suitable Personal Protective Equipment.

How to approach a damaged hybrid vehicle

Precautions that must be taken in any emergency situation involving a hybrid vehicle equipped with a high voltage system are listed below:

- Remove all jewelry (watches, necklaces, earrings, etc). Metal objects conduct electricity.
- Wear appropriate Personal Protective Equipment (insulating gloves, insulating hard hat/helmet, insulating boots, protective waterproof overcoat).
- Have the following equipment on hand: a powder-based fire extinguisher suitable for extinguishing class A, B, C fires and a non-conductive object, approximately 5 feet (1.5 metres) long, to safely push someone away from the vehicle who may have accidentally come into contact with the vehicle high voltage system.

Stabilizing the vehicle

If possible, stabilize the vehicle by applying the electric parking brake before deactivating the 12V electrical system: press the brake pedal firmly and pull the EPB lever on the dashboard to the left of the steering wheel.



Vehicle submerged in water

Warning

If the vehicle is immersed completely or partially in water, do not touch any high voltage system cables, connectors or components.

Generally, contact with the bodywork of a hybrid vehicle submerged in water does not pose a high voltage risk and normal extrication procedures can therefore be performed and the vehicle safely moved by following these recommendations:

- remove the vehicle from the water;
- if possible, allow the water drain from the vehicle;
- follow the procedures for stabilizing the vehicle and deactivating the high voltage system.

In the event of fire

Warning

DO NOT extinguish a fire using small amounts of water.

Small amounts of water may cause toxic gas to be emitted due to a chemical reaction with the lithium-ion electrolyte of the high voltage battery.

Warning

If the fire is limited in size, a powder-based fire extinguisher appropriate for extinguishing class A, B, C fires caused by electrical cables or components, etc. or oil may be used.

Procedure for deactivating the high voltage system

Warning

After deactivation, the high voltage system is not discharged immediately. Wait at least 30 seconds before working on the vehicle. Never touch or cut any of the high voltage components, cables or connectors: there is a risk of serious and even fatal injury.

To deactivate the high voltage system, do the following:

- Open the door on the driver side.
- If the vehicle is still running, perform a KEY-OFF.

Warning

The vehicle can only be considered to be in KEY-OFF state if the engine is off and the message eD "READY" does NOT appear on the instrument panel.

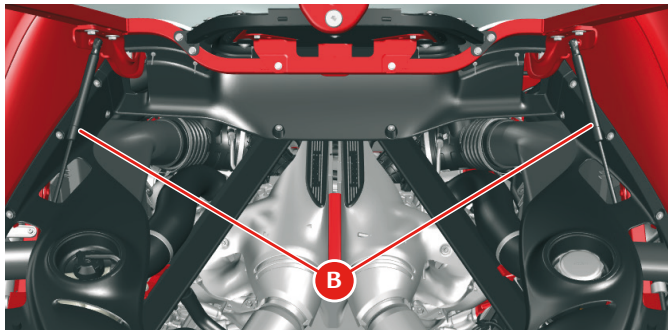


- Open the engine compartment lid by pulling lever **A** on the driver side door pillar.
- The lid is held open by two gas struts **B**.
- Access the engine compartment.

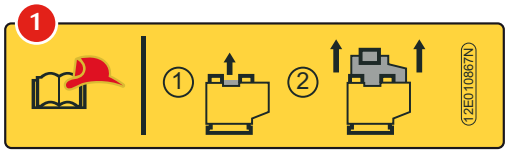
Warning

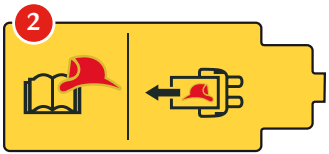
The high voltage system can only be deactivated using the HV service connector by qualified technicians who have the necessary, training, experience, documentation and equipment to work safely.

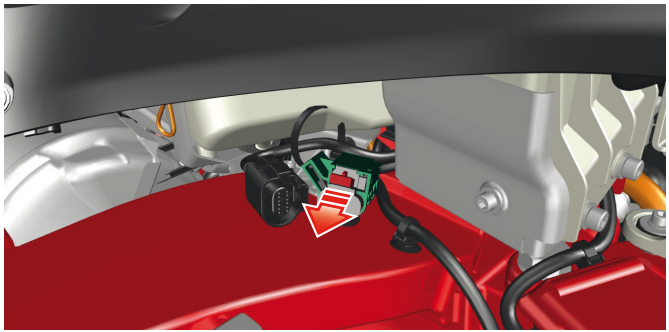




- Go to the HV service connector and remove the release device shown in the figure, as indicated on label **1** affixed to the trim panel.







Alternative emergency procedure

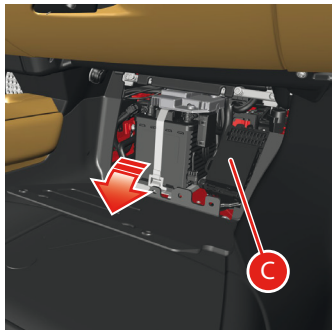
If the HV service connector is not accessible, follow the procedure described below:

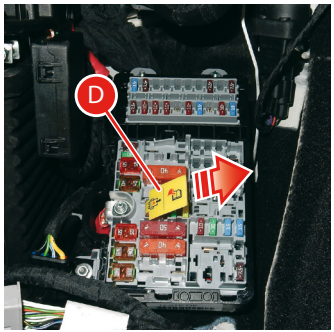
Warning

The high voltage fuse can only be removed by qualified technicians who have the necessary training, experience, documentation and equipment to work safely.

Only follow this procedure if you cannot access the HV service connector in the engine compartment.

- Lower the passenger footrest shown in the image below.
- Remove the fuse box cover **C**.
- Remove the fuse **D** shown in the picture with label (**2**) affixed to it.





Guide for extrication

Warning

Do not cut the high voltage hybrid system areas: there is a risk of serious and even fatal injury.

Warning

Do not cut the hybrid system high voltage battery: there is a risk of serious and even fatal injury.

Warning

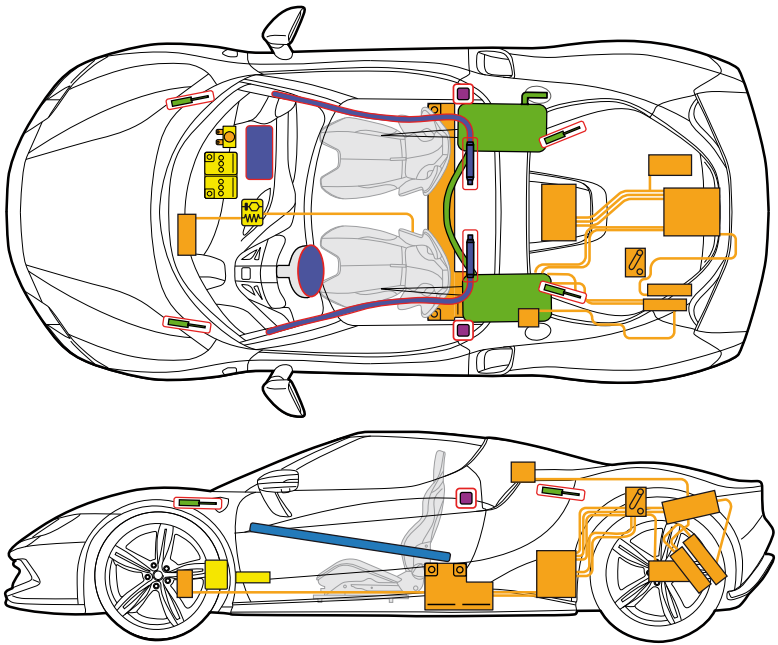
If vehicle components have to be removed, DO NOT touch any of the high voltage system components or the high voltage cables. There is a risk of serious and even fatal injury.

Warning

Emergency response personnel can cut the vehicle when at least 30 seconds have elapsed after deactivation of the high voltage system with the exception of the areas where the high voltage system cables, connectors and components and the high voltage battery are located.

Guide for extrication layout

	Airbag		Pyrotechnic gas inflation device		Seat belt pretensioner		SRS control unit		Active pedes-trian protection system
	Automatic rollover safety system		Gas/pre-com-pressed spring piston		High strength zone		Zone requiring particular attention		Safety valve
	12V Battery, low voltage		Supercapaci-tor, low voltage		Fuel tank		Gas tank		Superca-pacitor, high voltage
	High voltage battery pack		High voltage electrical cable/compo-nent		High voltage disconnector		High voltage cut-off fuse box		

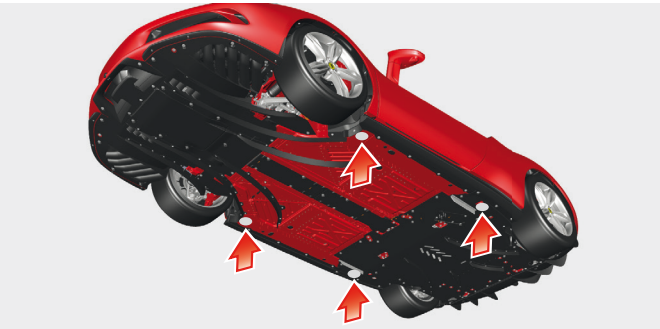


Lifting the vehicle

Warning

Given the shape of the undertray, access to the support points for lifting is not easy: to lift the vehicle, contact your AUTHORIZED FERRARI DEALER which has suitable equipment to perform the necessary work.
If the vehicle has to be lifted following an accident or in order to carry out emergency repair work, we recommend passing on the following information to the people who will be performing the work:
- Never lift the vehicle by pressing on the bottom of the high voltage battery. There is a risk of serious and even fatal injury.
- To lift the vehicle, use only the support points indicated below.

Failure to comply with the above may cause serious injury.



Warning

Be very careful when lifting the vehicle to avoid damaging the parts near the support points.

Warning

Never lift the vehicle using the support points near the high voltage battery which is in the central rear area.

To lift the vehicle, use only the points shown in the picture.

Transporting the vehicle

Warning

Do not tow this vehicle behind another vehicle. Towing in this manner can cause serious damage to the vehicle and the high voltage hybrid system.
Use only a flatbed truck or trailer.

Warning

Use of the emergency tow hook provided is only allowed in an emergency to load the vehicle onto the ramp of a flatbed truck or trailer.

To tow the vehicle, do the following:

- take the tow hook out of the tool bag;
- make sure that the area is free of dirt and tightly screw the tow hook into place on the RH front grill which allows access to the tow hook mount;
- if it is not engaged before KEY-OFF, release the parking brake (EPB) by pulling the lever on the dashboard and pressing the brake pedal.

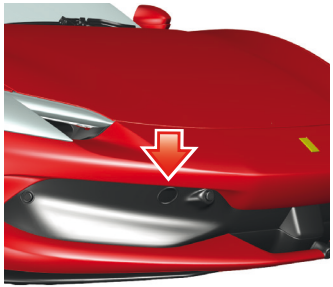
Important note

Do not use any points other than the provided emergency tow hook, installed properly in the appropriate location on the front bumper, to load and secure the vehicle onto a flatbed truck or trailer.

Warning

Do not tow the vehicle by attaching to suspension levers or wheel rims but only to the tow hook properly fitted in place.





Warning

If there is an electrical system failure, perform the manual emergency release procedure on the Electric Parking Brake (EPB) and Park Lock as described in the respective chapters of the Owner's Manual.

If the electrical system is still functioning, perform a KEY-OFF before towing.

Only if necessary and if the electrical system is still functioning, leave the instrument panel activated (KEY-ON) so that the lights can work; when towing the vehicle, do not try and start the engine.

Warning

While towing the vehicle, you must comply with Road Regulations.

Important note

Remember that power steering does not work when the engine is turned off.

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