VEHICLE: LOCKOUT - REMOVAL OF LOCKOUT

 **Note, one or more warnings are present in this procedure** 

Special tooling required	
Set of trim removal levers.	Car. 1363
Safety lockout plug padlock of the traction battery	Ele. 1980
Voltage detector	Ele. 1993
Safety lockout plug of the traction battery	Ele. 2005

Equipment required
Diagnostic tool
Class 00 or 0 electrical insulating gloves
Face shield
Bump cap
Electrical class 00 or 0 safety footwear
Protective overalls (Mainly coton)
Demarcation kit (posts, red and white chains, A4 mounting)

parts always to be replaced:
Seal of the flap of the electric traction power electronics fuses

X10 5AQ : Part always to be replaced : the fuse flap seal.

X10 5AM : Part always to be replaced : the seal of the flap of the electric traction electronics fuses.

WARNING

To avoid all risk of damage to the systems, apply the safety and cleanliness instructions and operation recommendations before carrying out any repair:

- Battery: Precautions for the repair ,
- Wiring: Precautions for the repair ,
- (see 01D, Mechanical introduction, Vehicle: Precautions for the repair) .

WARNING

The procedures described below must be performed by a qualified employee authorised to work on a high-voltage onboard network.

Any work performed on the vehicle's high-voltage network poses a risk of death by electrocution. The company that employs the operator is responsible for granting authorisation, subject to certain conditions regarding mandatory skills and training.

WARNING

DANGER: HIGH VOLTAGE VEHICLE.

Risks of serious burns or electric shocks that may prove fatal.

Before carrying out any work on the vehicle, it is essential that you follow the instructions regarding vehicle lockout. This work must be carried out by an employee who is qualified and authorised to work on a high-voltage onboard network(see 01D, Mechanical introduction, Vehicle: Precautions for the repair) .

WARNING

It is prohibited to work alone in the workshop. There must always be someone else in the vicinity to help the person in danger in the event of a problem.

Note:

Remove all personal metal objects (jewels, watch,...).

Required equipment:

- Protection for traction battery connector sockets,
- "LOCKOUT / REMOVAL OF LOCKOUT" sheet.

LOCKOUT-REMOVALOFLOCKOUT

1. VEHICLE: LOCKOUT

1- IDENTIFICATION OF THE VEHICLE

Check the vehicle's identification (registration, VIN) based on the repair order.

Remove all personal metal objects (jewellery, chain, wedding ring, watch, etc.).

Switch on the vehicle and energize the electric engine (position "Ready").

Check the correct operation of the panel instrument display at vehicle start.

Note:

If the instrument panel does not work, do not continue with your task and ask an employee who is qualified and authorised to work on a high-voltage onboard network to perform fault finding.

Check that no traction chain or traction battery fault is indicated on the panel instrument display.

Note:

if there is a defect, do not continue with your task and ask an employee who is qualified and authorised to work on a high-voltage onboard network to perform fault finding.

Open the driver's window.

Position the vehicle on a two-post lift, if necessary, depending on the operation to be carried out subsequently Vehicle: Towing and lifting .

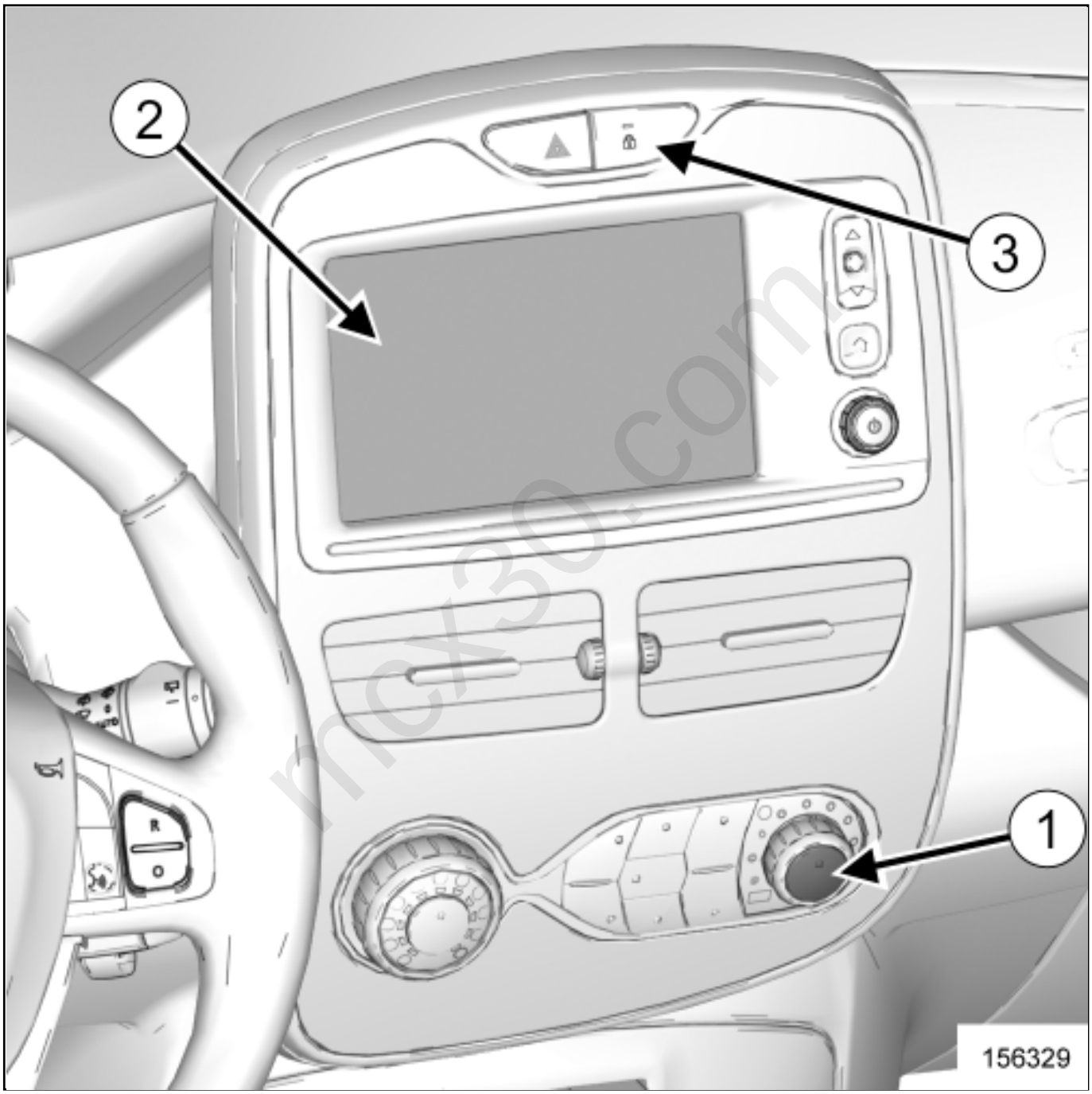
Put:

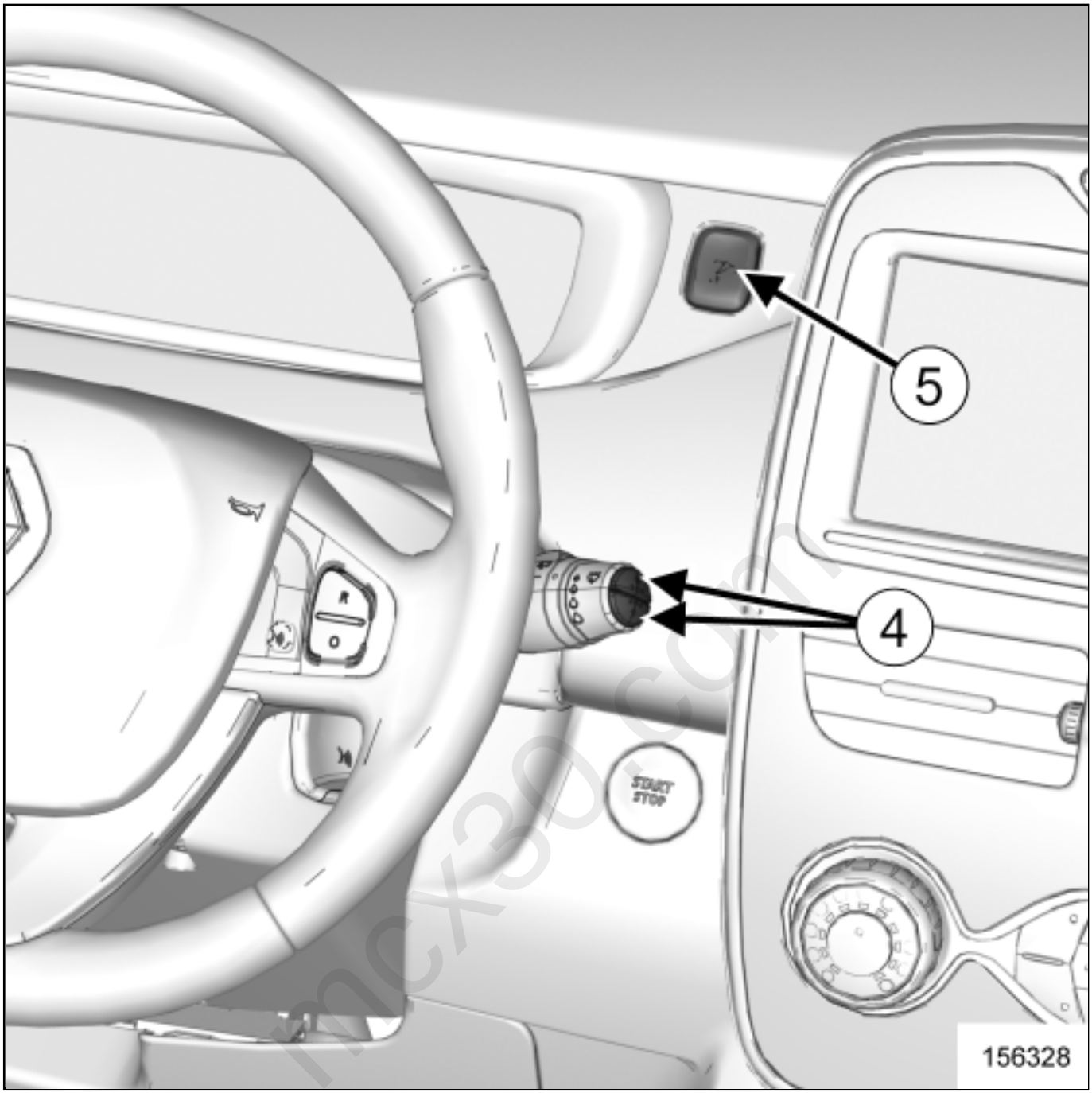
- the handbrake,
- the vehicle in neutral position.

Switch off all the electrical consumers (lights, windscreen wiper, the blower, air conditioning...).

- Switch off the vehicle.

- Note on the repair order the programming performed by the customer of preconditioning thermal comfort.





- Stopping the automatic starting of air conditioning and heater functions:
  - stop the scheduled pre-chambering by pressing the time setting button(1) , select "OFF" on the menu displayed by the main screen(2) and then validate by pressing "Completed" ,

-stop the remote control by the telematics computer by pressing the three buttons on the dashboard:

- the two buttons(4) and the button(5) ,in this case, "After sale mode" is displayed on the instrument panel.

- Open the bonnet.
- Remove the vehicle keys or card.
- Place the vehicle keys or card outside the vehicle, leaving the door open.

- Mark out the work area using a specified Demarcation kit (posts, red and white chains, A4 mounting).
- Make sure that no work is in progress.
- Ensure the work area is evacuated.
- Open the openings necessary for work to be performed later.
- Keep the front doors open.
- Lock the doors by holding down the "central double locking" button(3) .

Note:

Do not operate on opening orders or consumers during computers to go to sleep.

- Wear personal protective equipment:
  - Protective overalls (Mainly coton),
  - Electrical class 00 or 0 safety footwear,
  - Class 00 or 0 electrical insulating gloves,
  - Face shield,
  - Bump cap .

Note:

Check that the gloves are not damaged.

2- SEPARATION OF THE POWER SOURCES

- Disconnect external voltage sources (charging cable, external electrical tool).

CAUTION

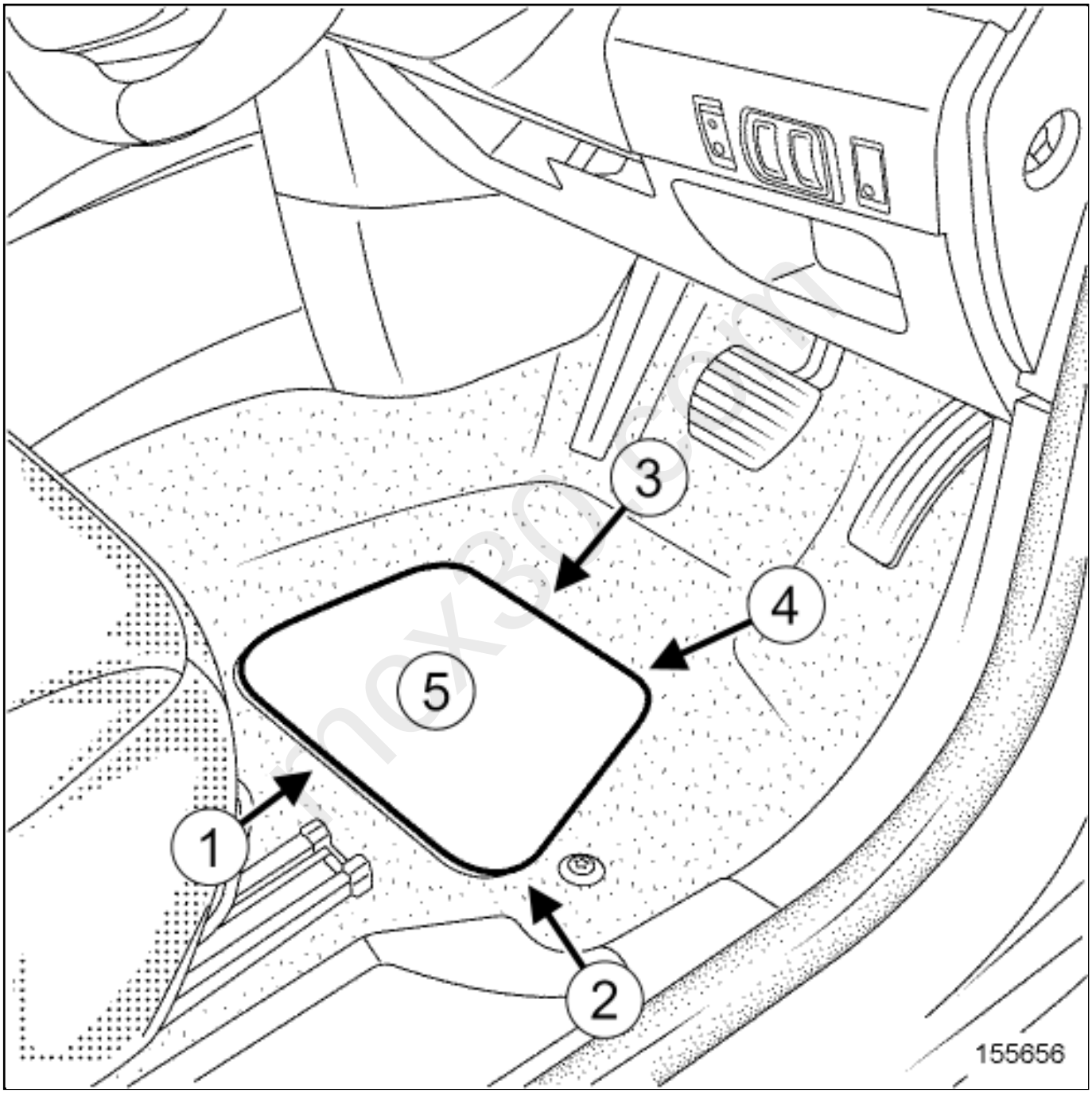
- Before disconnecting the 12-volts battery:
  - wait for the motor-driven fan assembly to stop,
  - wait for the computers to complete saving (5 minutes).

- Wait for the computers to go to sleep for 3 minafter the central door locking LED has gone out.

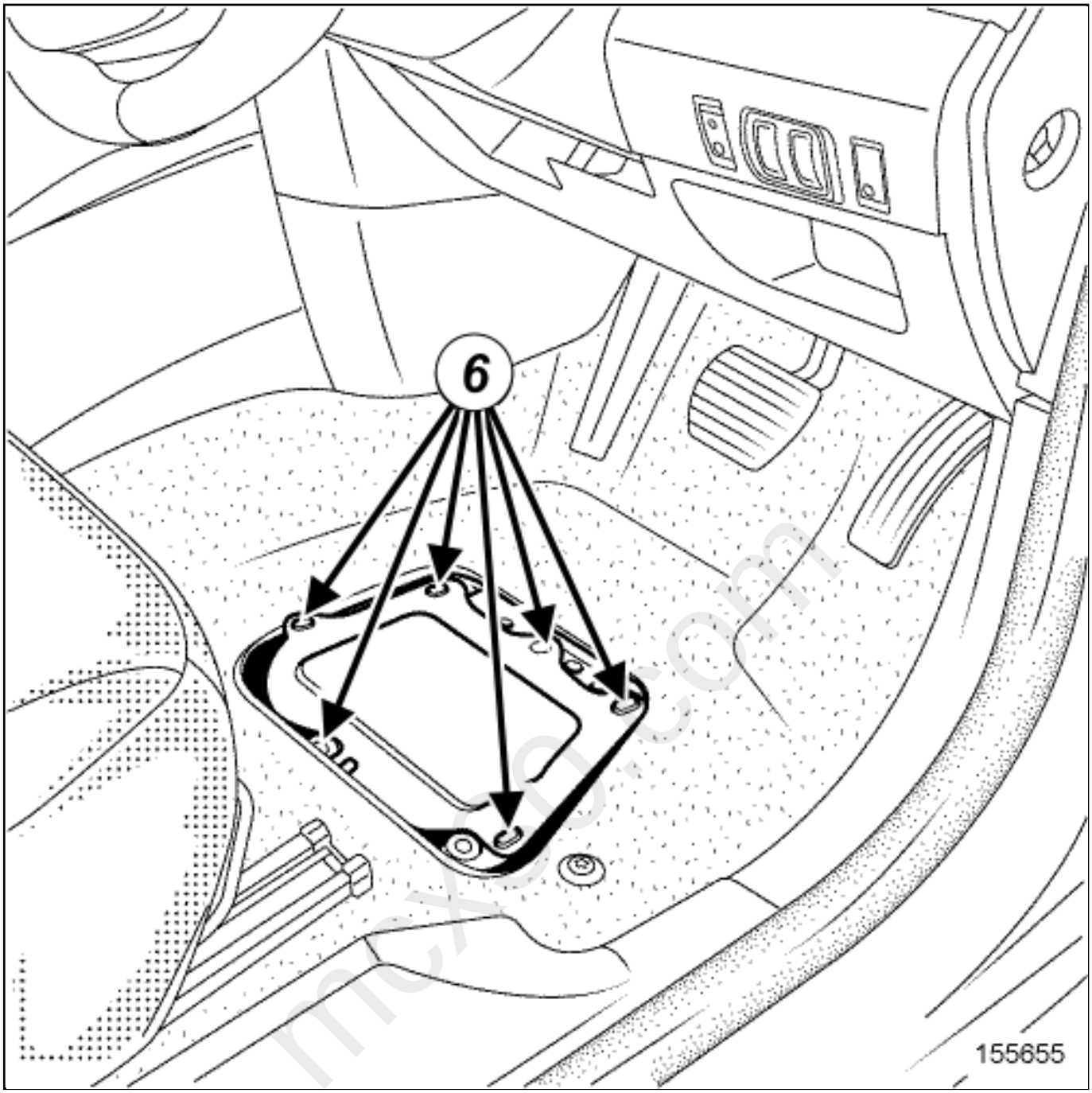
Note:

The buzzer of the gear control lever is activated.

1)DURING VEHICLE TO GO TO SLEEP



- Unclip in the order(1) , (2) , (3) , (4) the traction battery safety device switch trim(5) .



- Turn the retaining pins(6) of the traction battery safety device switch plate.
- Remove the traction battery safety device switch plate.
- Check:
  - that the central door locking LED has gone out,
  - that the instrument panel has turned off,
  - to have waited 3 minafter that the central door locking LED has gone out.

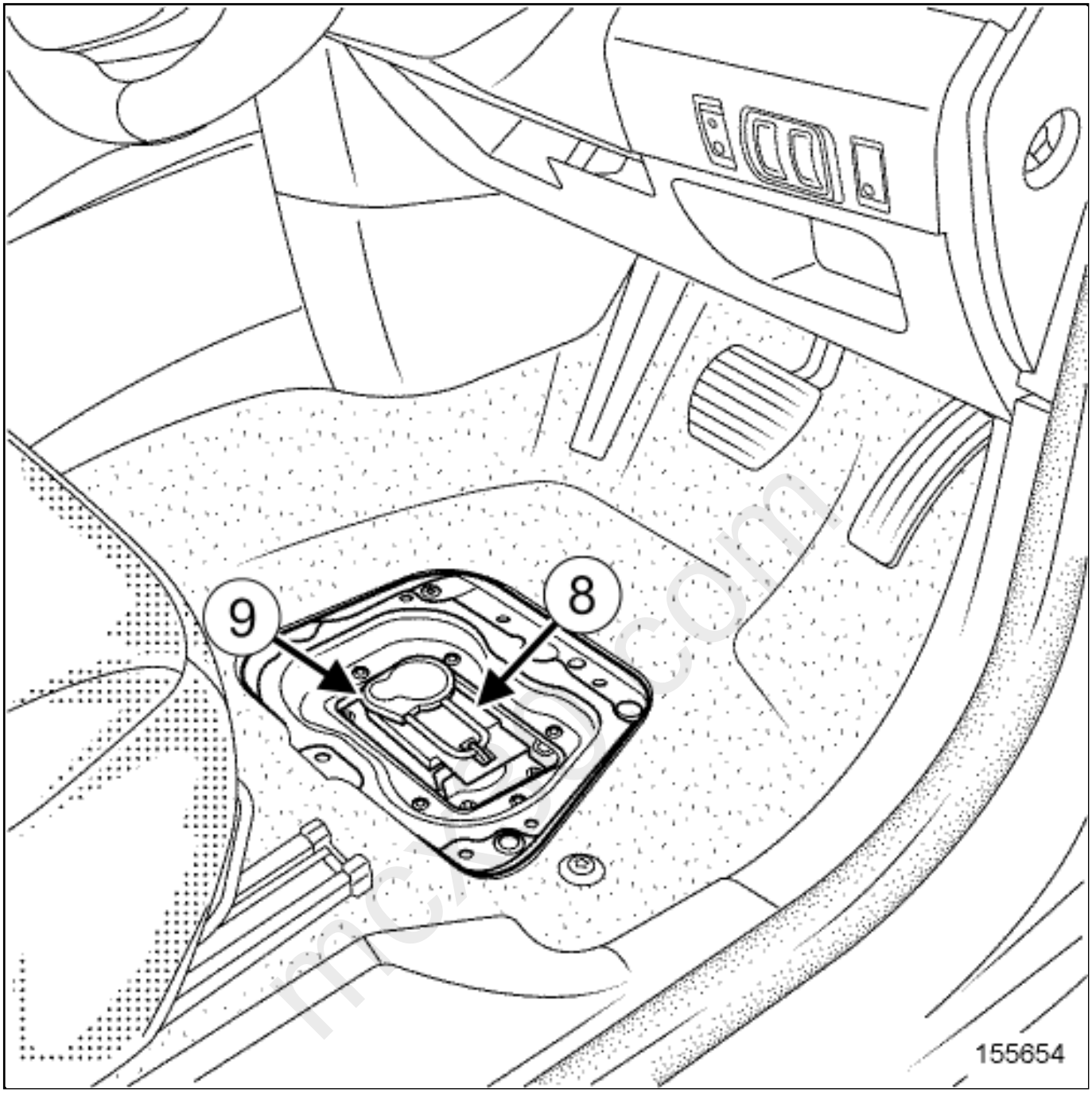
- Remove the traction battery safety device switch(7) .

Note:

After that the central door locking LED has gone out, an awakening (2s to 62s) of the instrument panel coupled with a service warning light can be observed before or during the removal of the traction battery safety device switch.

- Engage the 5 mincountdown between the disconnection of the traction battery safety device switch

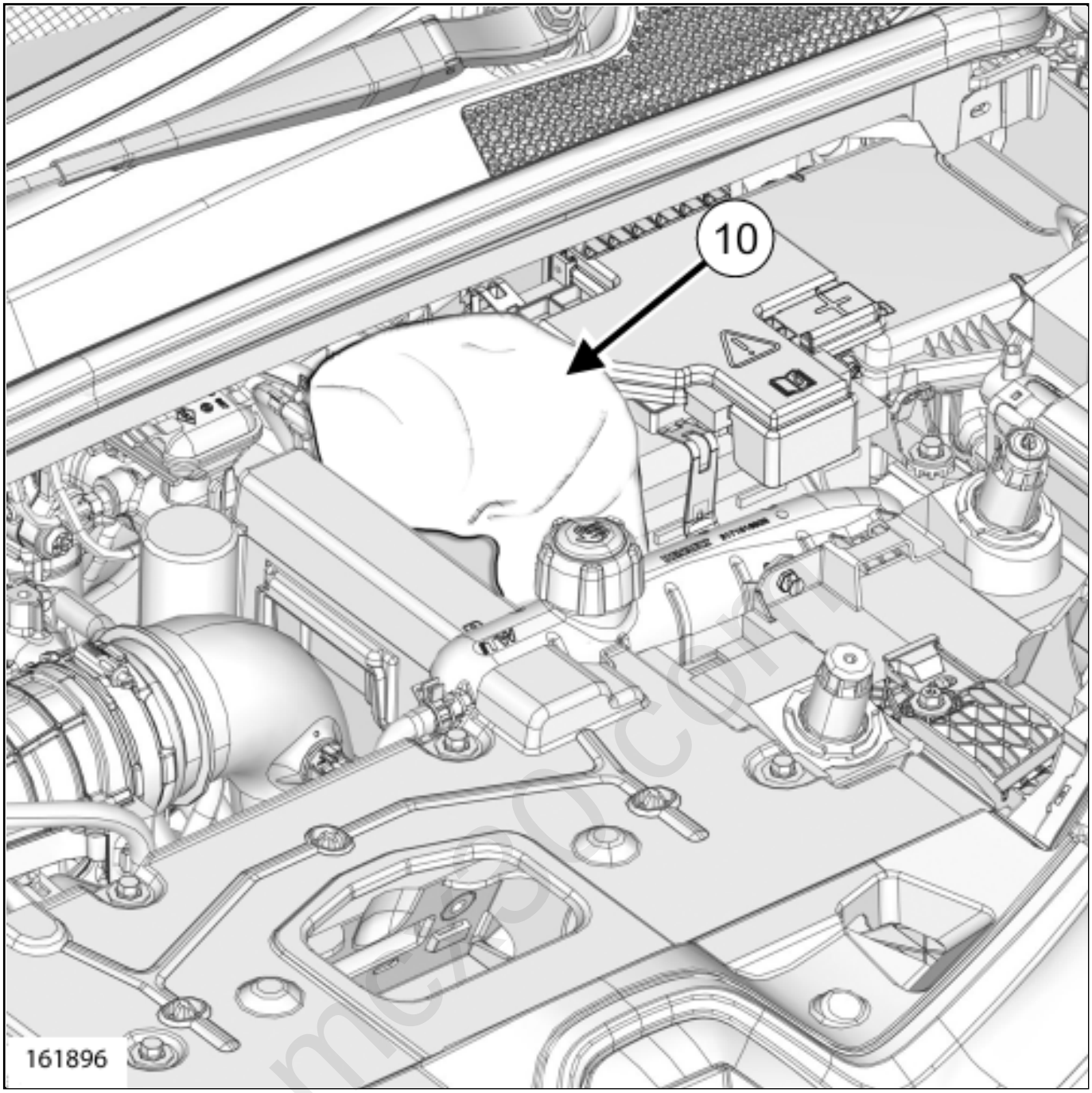
and the check for absence of voltage.



Fit:

- theSafety lockout plug of the traction battery(**Ele. 2005**) (**8**) on the base of the traction battery safety device switch socket,
- theSafety lockout plug padlock of the traction battery(**Ele. 1980**) (**9**) on theSafety lockout plug of the traction battery (**Ele. 2005**) .

Place the traction battery safety device switch on the dashboard or a lockout panel.



- Remove the earth terminal from the 12V battery.

- Insulate the 12V battery earth terminal(10) .

- Remove (see **Electric vehicle charger assembly: Exploded view**) :
  - the fuse flap bolts, begining by the lower bolts,
  - the fuse flap,
  - the fuse flap seal.

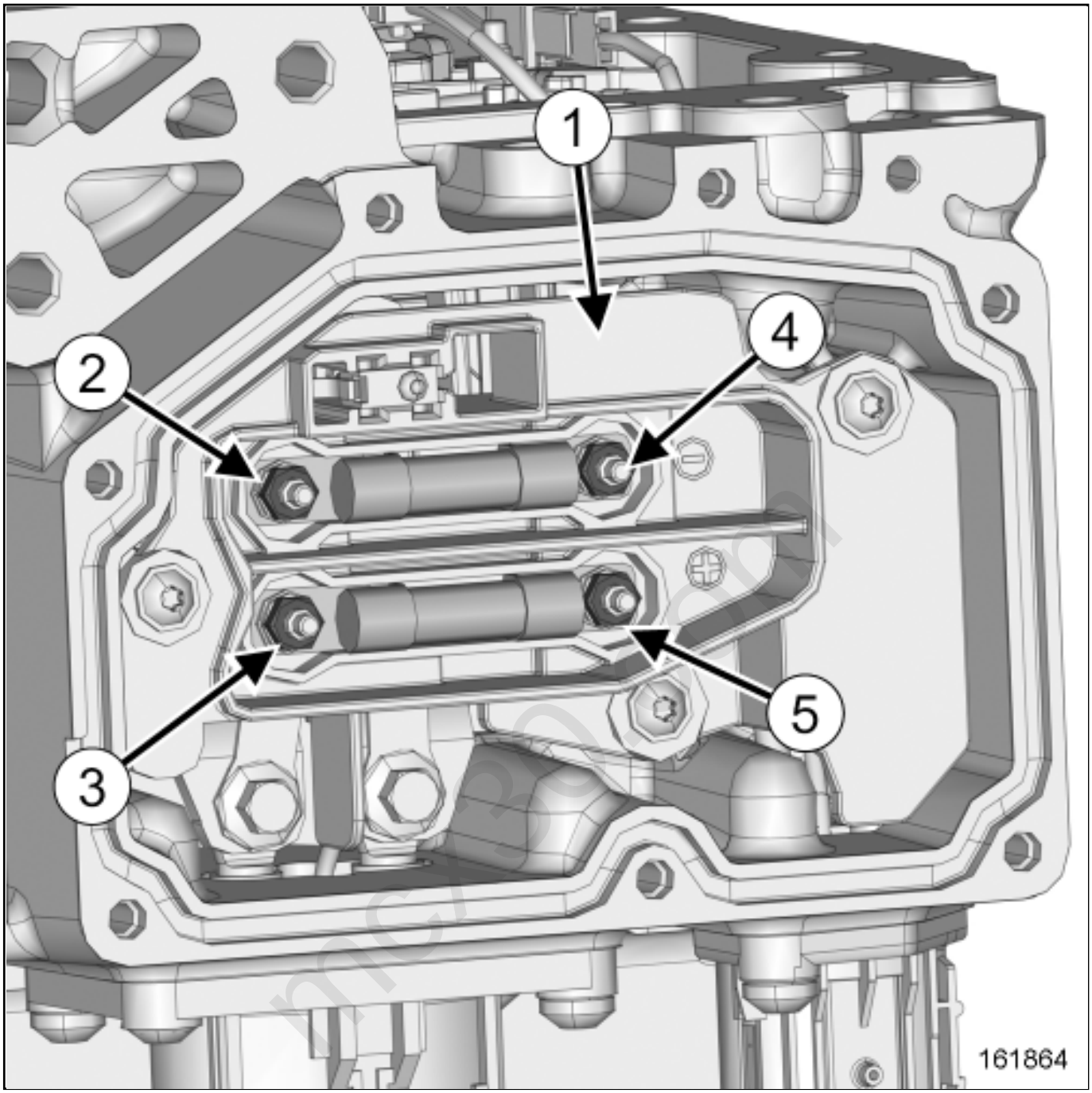
3- CHECK FOR ABSENCE OF VOLTAGE

- Wait 5 minafter the disconnection of the traction battery safety device.

- Before taking any measurements, make sure that the toolVoltage detector(Ele. 1993) is working correctly.

WARNING

Never use a voltage detector if its self-test is incorrect as it could provide erroneous data that could put you in danger.



Check that there is no voltage using the toolVoltage detector(**Ele. 1993**) via the fuse flap used to check for the absence of voltage on both sides of the two fuses(see **Electric vehicle charger assembly: Exploded view**) :

- between the phases (2 measurements)(**2**) with (**3**) , (**4**) with (**5**) ,
- between the phases and the earth (4 measurements)(**1**) with (**2**) , (**3**) , (**4**) , (**5**) .

WARNING

An electrical hazard occurs if the voltage is not 0V. Carry out a diagnosis and only proceed to the next step once he problem has been rectified.

- Make sure that the toolVoltage detector(Ele. 1993) is working correctly after taking the measurements.
- Remove the personal protective equipment.
- Refit the fuse flap without tighten to torque the bolts.
- Tighten to contact the access flap of the electric traction power electronics fuses to prevent exterior pollution (definitive refitting with replacement of fuse flap seal and tightening to torque will be carried out during the removal of lockout).

4- VEHICLE IN ELECTRICAL SAFETY MODESIGN

- Place "WARNING DANGER" and "VEHICLE SAFETY ZONE" at the front and rear of the vehicle.
- Complete and place the "Lockout / Removal of Lockout" sheet at the front of the vehicle.

2. VEHICLE: REMOVAL OF LOCKOUT

WARNING

It is prohibited to work alone in the workshop. There must always be someone else in the vicinity to help the person in danger in the event of a problem.

1- IDENTIFICATION OF THE VEHICLE

- Check:
  - the vehicle's identification (registration, VIN) based on the repair order,
  - that the work requiring the lockout has been completed and that electrical and other risks have been evaluated.
- Remove all personal metal objects (jewellery, chain, wedding ring, watch, etc.).
- Check that:
  - the handbrake applied,
  - all the electrical consumers (lights, windscreen wiper, the blower, air conditioning...)are stopped,
  - the vehicle is switched off,
  - the bonnet is open,
  - the vehicle keys or card are outside the vehicle.
- Mark out the work area using a specified Demarcation kit (posts, red and white chains, A4 mounting).
- Make sure that no work is in progress.

- Ensure the work area is evacuated.

2- CHECK THE VEHICLE AND ENSURE ITS CONFORMITY

- Check the conformity of the vehicle after reassembly, visual inspection of connectors.
- Disconnect external voltage sources (charging cable, external electrical tool).
-

parts always to be replaced: **Seal of the flap of the electric traction power electronics fuses**.

- Refit the fuse flap with a new fuse flap seal.
- Torque tighten the fuse flap bolts**Electric vehicle charger assembly: Exploded view** .

3- UNLOCKING AND RESTORE THE POWER SOURCES

- Wear personal protective equipment:
  - Protective overalls (Mainly coton),
  - Electrical class 00 or 0 safety footwear,
  - Class 00 or 0 electrical insulating gloves,
  - Face shield,
  - Bump cap .

Note:

Check that the gloves are not damaged.

- Remove the insulation of the battery earth terminal.
- Refit the 12V battery earth terminal.

CAUTION

Incorrect tightening could cause heating of contacts, starting or charging faults, sparking, or could cause the battery to explode**Battery: Precautions for the repair** .

- Torque tighten the nuts of the 12 V battery earth terminal8 N.m.

Note:

Do not operate on opening orders or consumers before the end of the refitting of the traction battery safety device switch plate.

- Remove:
  - the toolSafety lockout plug padlock of the traction battery(**Ele. 1980**) from the toolSafety lockout plug of the traction battery (**Ele. 2005**)
  - the toolSafety lockout plug of the traction battery(**Ele. 2005**) from the base of the traction battery safety device switch socket.

- Refit:
  - the traction battery safety device switch,
  - the traction battery safety device switch plate.

- Turn the retaining pins of the traction battery safety device switch plate.

- Clip the traction battery safety device switch trim.

- Remove personal protective equipment:
  - Protective overalls (Mainly coton),
  - Electrical class 00 or 0 safety footwear,
  - Class 00 or 0 electrical insulating gloves,
  - Face shield,
  - Bump cap .

- Insert the vehicle keys or card.

- Switch on the vehicle (APC).

- Check:
  - that no faults are indicated on the instrument panel,
  - that there are no faults with Diagnostic tool,
  - that it is possible to start the vehicle without fault.

4- REMOVE THEVEHICLE IN ELECTRICAL SAFETY MODESIGN

- Remove the "Lockout / Removal of Lockout" sheet from the front of the vehicle.

- Complete the "LOCKOUT / REMOVAL OF LOCKOUT" sheet.

- Remove:
  - the lockout signs from the front and rear of the vehicle,
  - the Demarcation kit (posts, red and white chains, A4 mounting)equipment.

- Define the programming performed by the customer of preconditioning thermal comfort noted on the repair order.