Erasmus+

eTwinning

e-Day Car: Sustainable Mobility and Culture

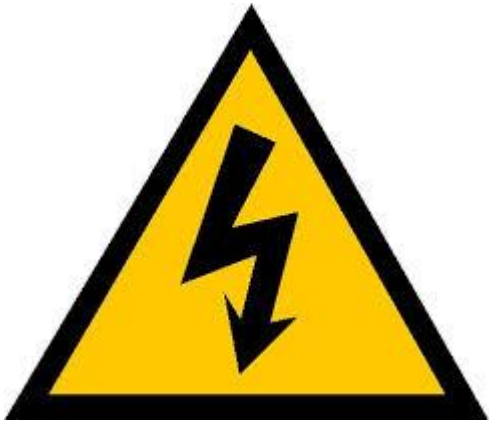
Vocational schools from Bulgaria, France and Italy.

2014
2017

institut Lemonnier

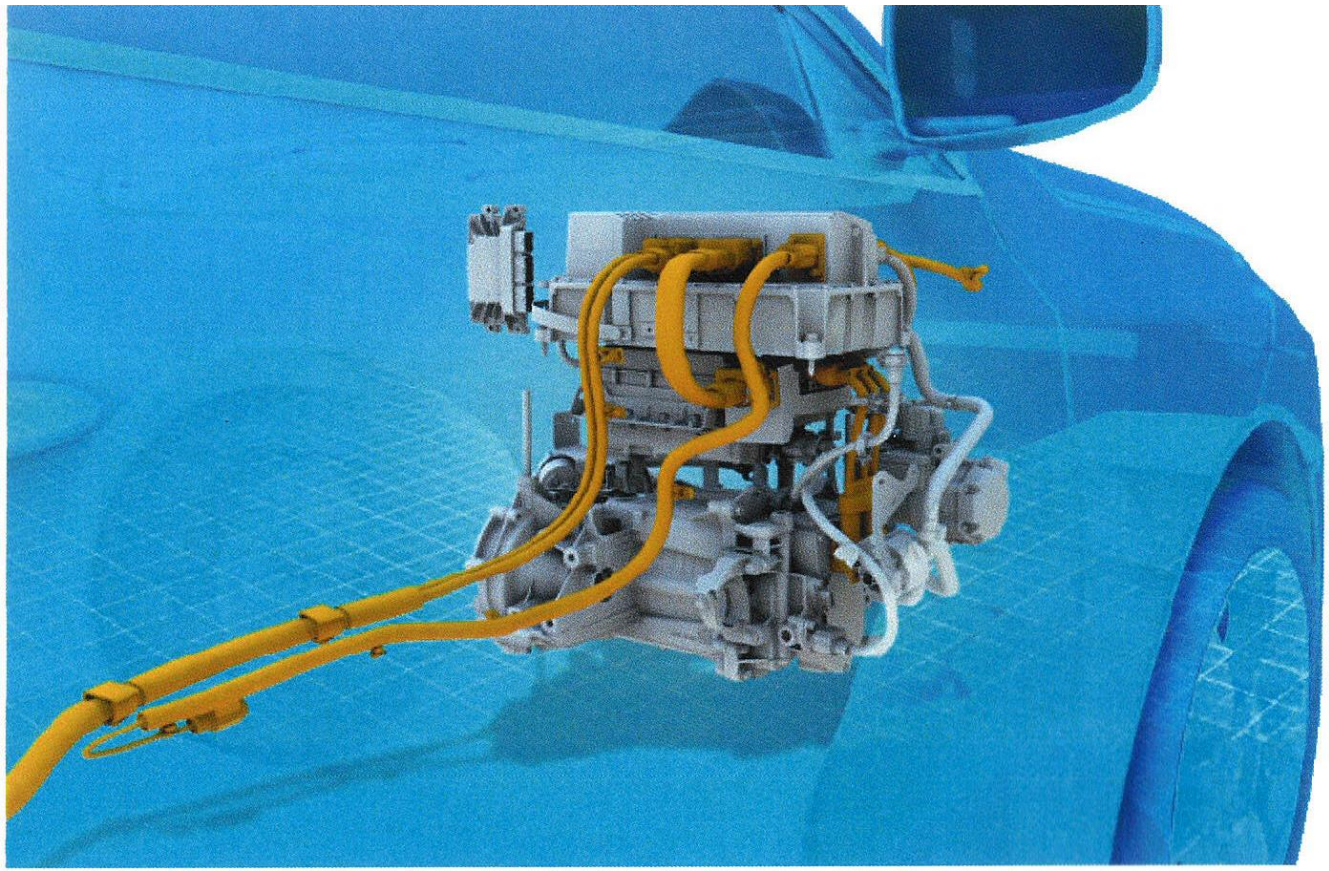
2e2f

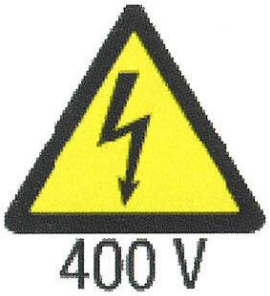
Training for electrical risks



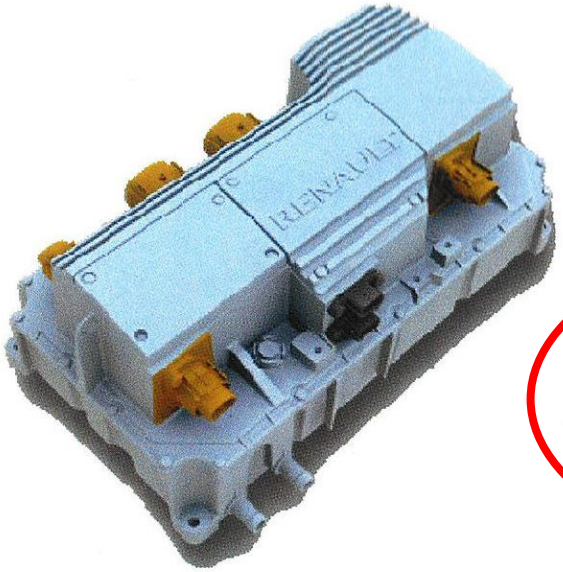
Why is it necessary
Lockout and removal of lockout !?

Be careful !

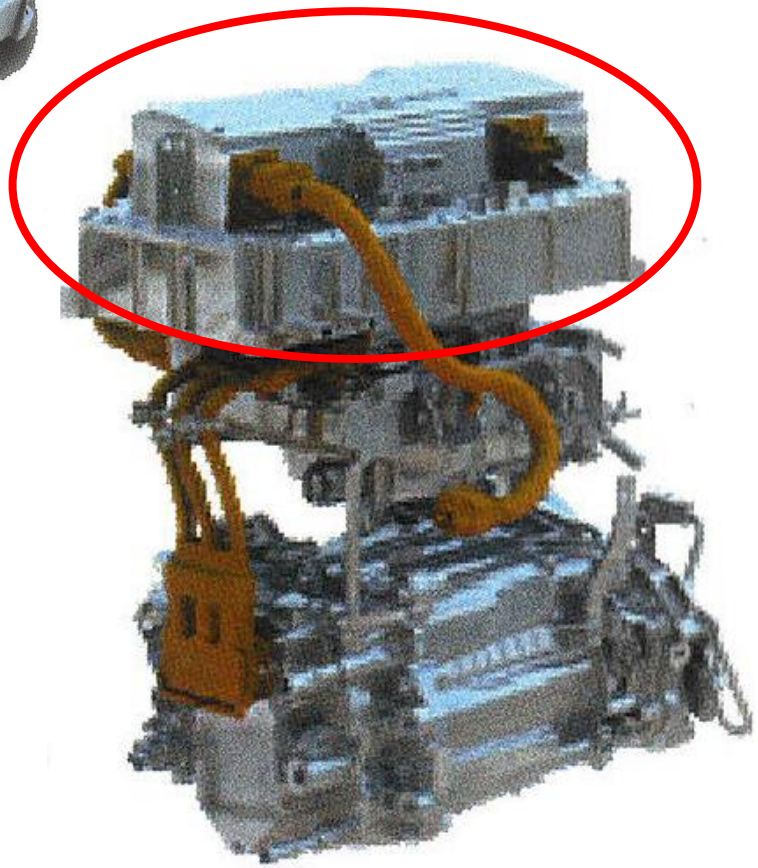


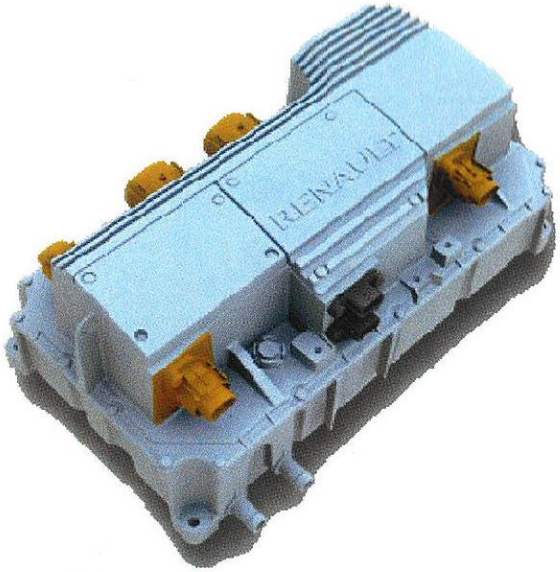


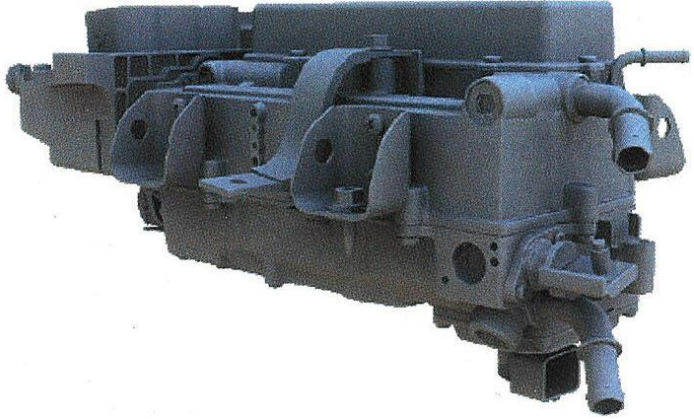
In an electric car, the network used 400 volt and is orange color.

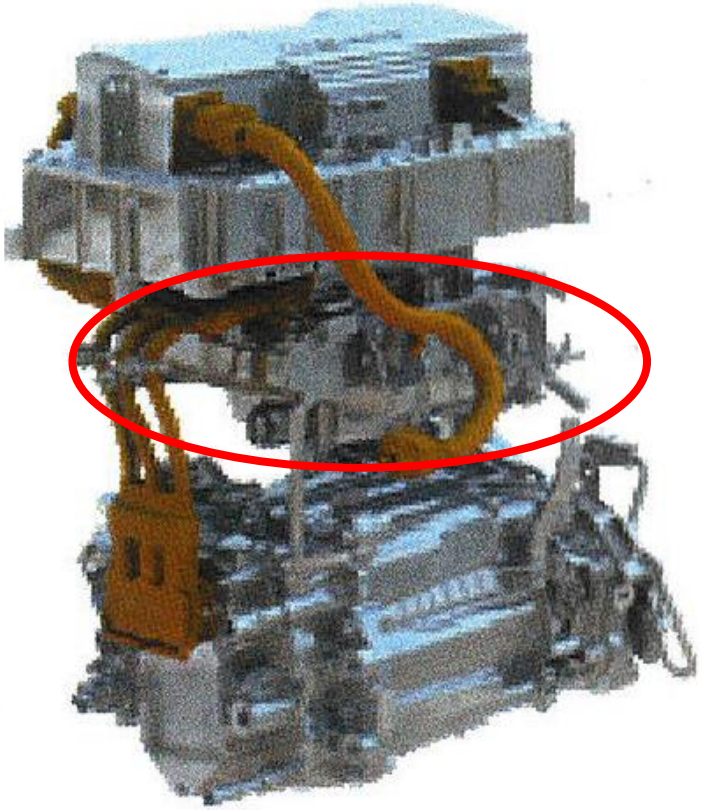


Junction box : contain the charger and permit to distribute the 400V energy to the network.



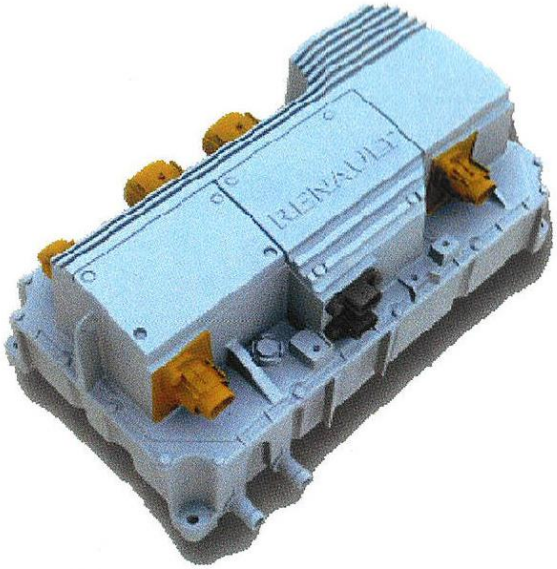


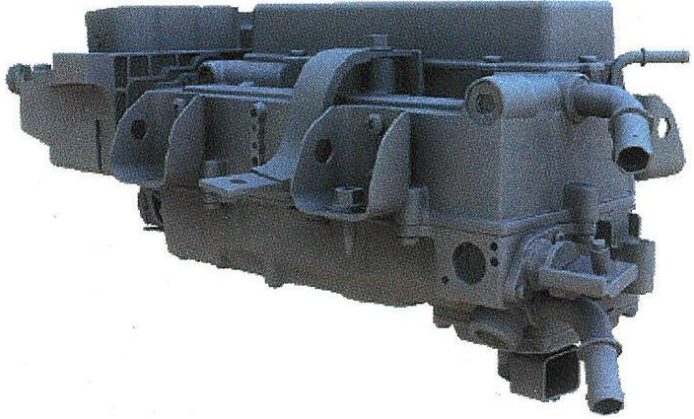


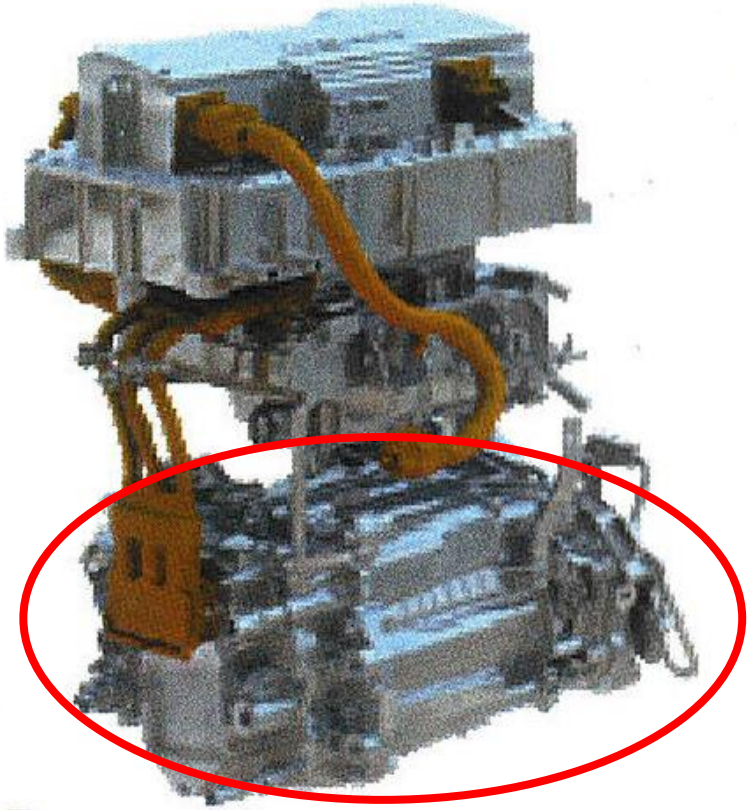


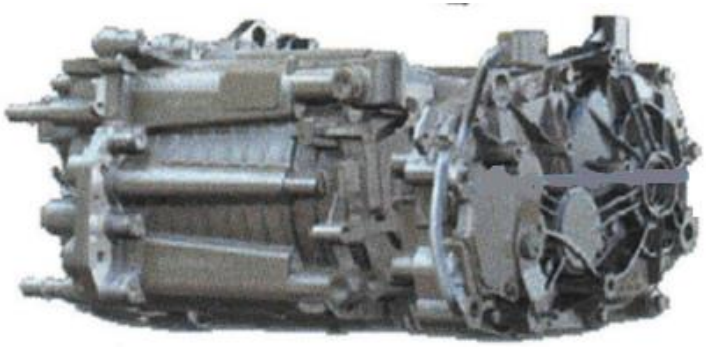
Electronic Power Unit :

- INVERTER DC/AC
- CONVERTER DC/DC
- High Voltage Control Unit : convert 400V on 12V and replace the alternator.





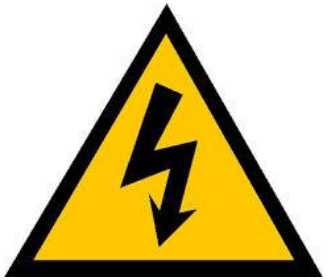




Electrical motor including speed reducing gears


VIDEO

Electritical risks :



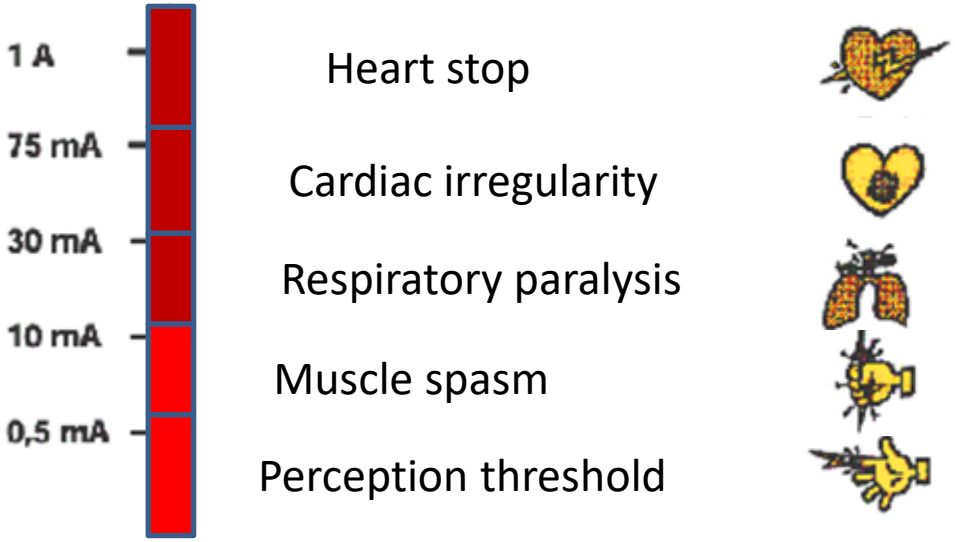
Work on an electric car as the ZOE entail risks :

- an electric arc

- An electrocution on one party of the car in tension

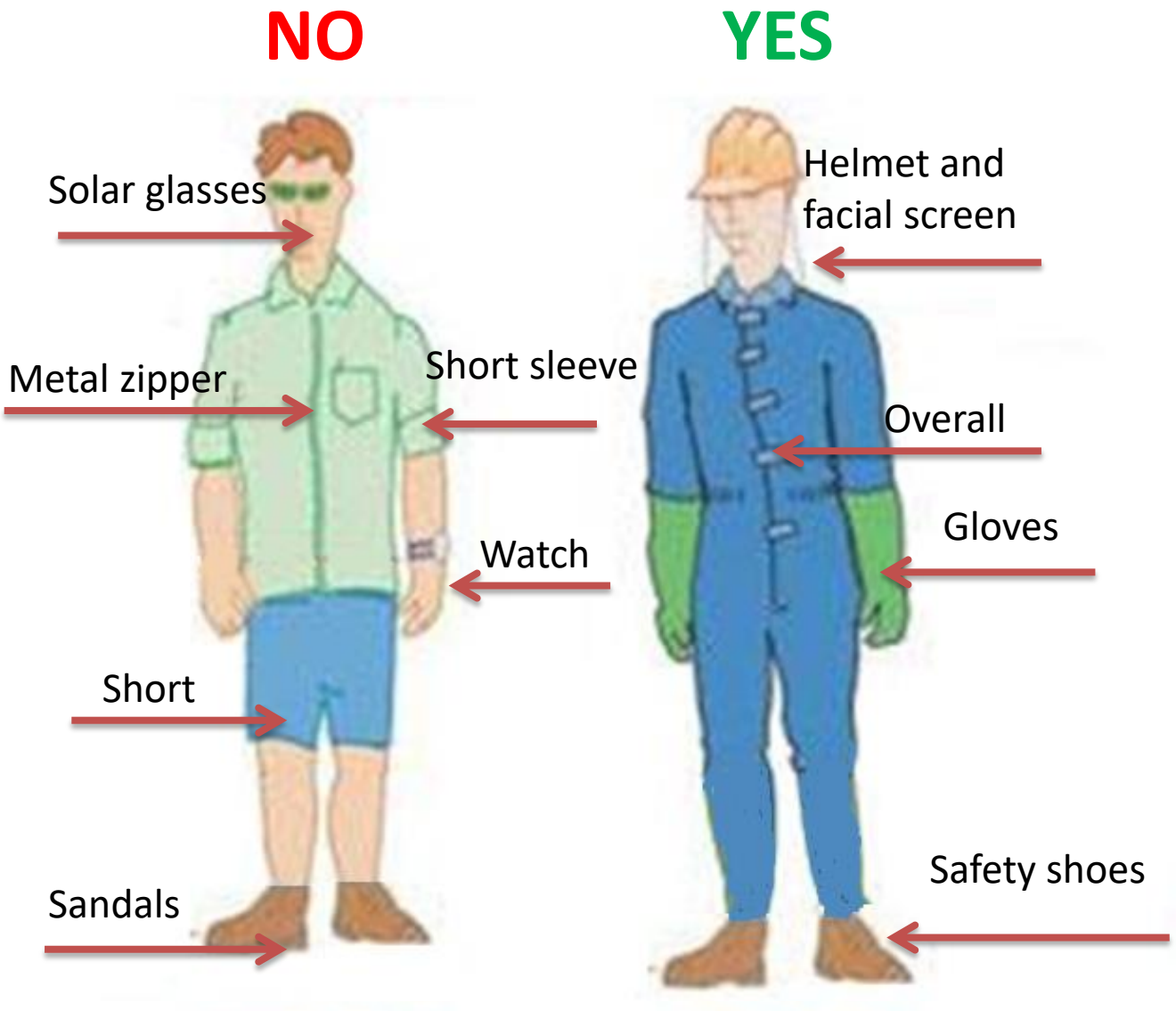
-An electrocution by contacts of one left for tension with tool not protected and unauthorized for this work

In the ZOE car the electrical tension is 400 volts and 16 amperes.



If we arrive at this level we rısk be to electrocute
This is a risk of death.

Equipment for safety work



Safety tools

Lockout / Removal lockout

Lockout definition

The lockout is the separation of tension from traction battery pack and the condemnation of the organs of separation to make impossible any stress for workng on the car.

STEPS

1. INDENTIFICATION
2. SEPARATION
3. LOCKING
4. VAT

The plug for the consignment

- For the consignment, the plug must be systematically kidnapped to have exactly no more any source of tension.
- The plug is situated below the passenger front seat.

First step : car identification

Certificat d'immatriculation

N° Immatriculation — Date de 1ère immatriculation

A. DL-937-VY — B 18/11/2014

C.1 ASSOC INSTITUT LEMONNIER

C.4a EST LE PROPRIÉTAIRE DU VÉHICULE

C.4.1

C.3

60 RUE D HEROUVILLE

14000 CAEN

D.1 RENAULT

D.2 AGVYA0

D.2.1 M10RENVP026P789

D.3 ZOE — E. VF1AGVYA052055959

F.1 1943 — F.2 1943 — F.3

G 1503 — G.1 1428

J M1 — J.1 VP — J.2 AB — J.3 CI

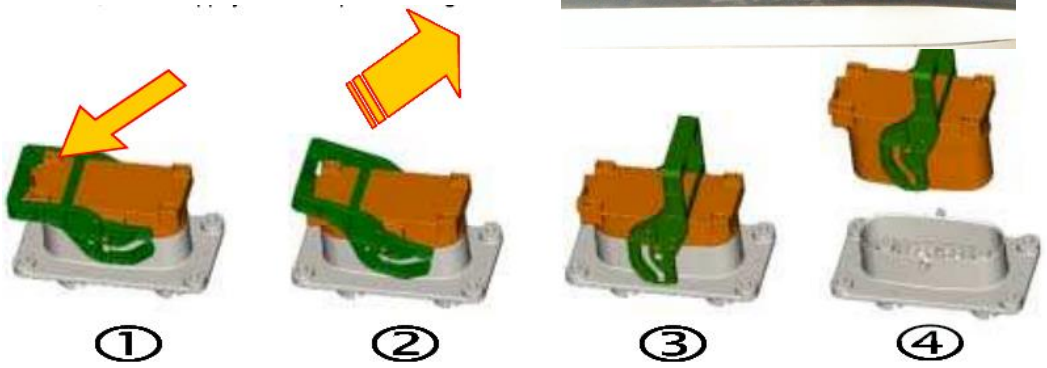
K e2*2007/46*0251*03

Second

- Put a electric markup around the car to alert the consignation

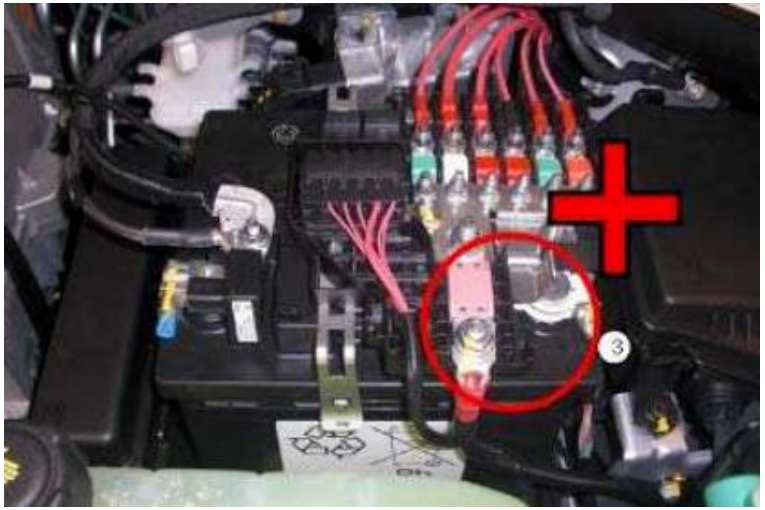
Third

- Remove the plug to open the circuit



Fourth

- Deconnect the 12Volt batterie pack



fifth
Verification Absence Voltage

- You have to do a voltage absence verifcation to check if we are in safety condition

It’s finish

- Well done you did the consignation of the renault zoe, you can work in safty condition

Now the removal lockout

First

- Reconnect the 12V batterie package

Second

Reconnect the 400V batterie package

third

- Remove the electric markup

It’s finish

You can check and start Z0E car