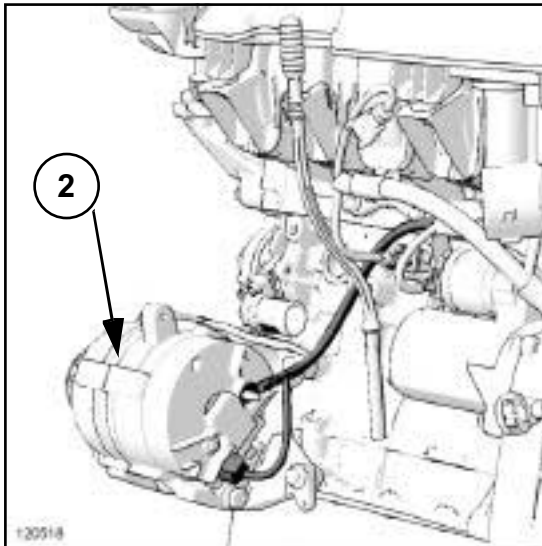
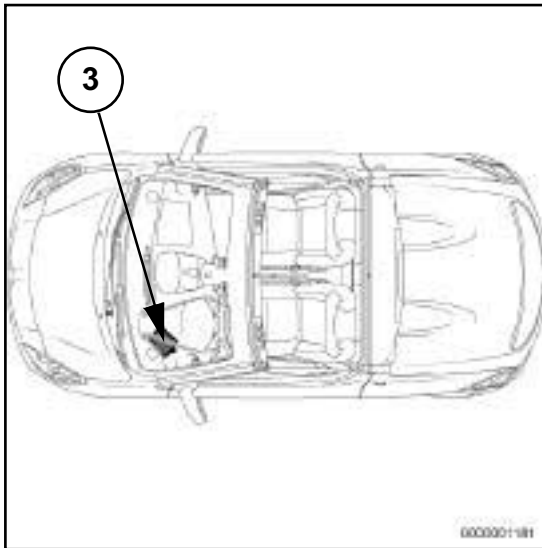


1- Starter



2- Alternator



3- Passenger Compartment Central Unit (UCH)

STARTING-CHARGING

Fault finding – Role of components

16A

- **Battery**

The principal purpose of the battery is to provide the powerful current briefly required by the starter motor to start the engine. For optimum starting, the current supplied by the battery must be sent to the starter motor with minimum loss. To achieve this, the electrical connections (wires, terminals, connectors, etc.) must be in good condition. When the engine is not running, the battery must feed the accessories that operate constantly, even with the ignition switched off, such as the alarm, radio codes, computers, etc.

- **Alternator**

The alternator only operates when the engine is running. Its function is to recharge the battery, and at the same time to supply the electrical power required to operate all the electrical accessories on the vehicle. The E33 alternator is a controlled alternator. The UCH controls the regulation by means of a serial connection (BSS).

- **UCH**

The UCH is linked to the alternator by a serial connection (BSS connection). The UCH and the alternator communicate via this connection.

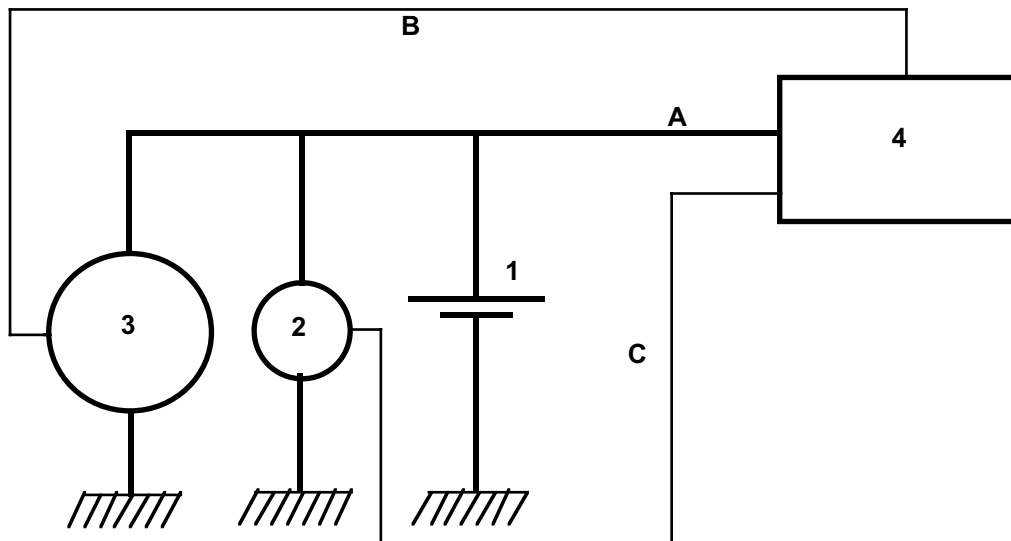
The UCH intelligently manages the alternator regulation voltage according to the engine phase, battery charge and temperature.

- **Starter**

This turns the engine over to make it start, and requires a very powerful electric current, which the battery must be able to supply.

STARTING-CHARGING

Fault finding – Operating diagram

16A**STARTING - CHARGING FLOWCHART:**

- 1- Battery (107)
- 2- Starter (163)
- 3- Alternator (103)
- 4- UCH (645)

A- Supply and voltage measurement

B- BSS connection (serial connection for communication between the alternator and the UCH)

C- Starter control line

STARTING-CHARGING

Fault finding – Features

16A

The function of the charging circuit is to:

- Ensure electrical energy is supplied to the vehicle whilst respecting the dynamic performance constraints of the engine and transmission assembly: the alternator resisting torques and the torque gradients measured must be managed.
- To control alternator loading and load shedding during engine management authorisation or variation of the electrical load.
- To ensure the quality of the on board network voltage in terms of the voltage level and variation (voltage gradient management).
- To optimise the battery charge by applying a voltage to its terminals correlating to its initial charge status (in sleep mode) and to its internal temperature.
- To inform the engine management about the mechanical power taken from the accessories pulley, the alternator charge rate and the rotor excitation current value.
- To run fault finding on the charging circuit: "Battery" warning light display.

The function of the starting circuit is to:

- start the vehicle when there is a starting request from the ignition key.

STARTING-CHARGING

Fault finding – Customer complaints

STARTING

THE STARTER DOES NOT WORK

————> ALP 1

THE STARTER TURNS BUT DOES NOT ENGAGE

————> ALP 2

STARTER NOISY

————> ALP 3

LOW STARTER SPEED

————> ALP 4