

Observe safety instructions for handling vehicle battery.

**Before disconnecting battery:**

Switch off ignition.

*Note:*

If the ignition is not turned off when the battery is disconnected, fault memories may be set in some control units.

**Important!**

- There is a danger of mixing up battery leads: If the battery positive and negative leads are the same color and you are in doubt, follow the polarity to the battery, then mark and cover the leads.
- On vehicles with radio code: After disconnecting the battery, the radio code must be re-entered. Therefore obtain the radio code card from the customer beforehand. Note stored stations and restore them after connecting the battery.
- Stored settings of the on-board computer and clock will also be lost.
- All available central keys must be recoded for cars with first generation infrared transmitter locking systems.

**General notes on disconnecting battery:**

- Do not disconnect battery leads and leads from alternator and starter motor while engine is running.
- Cars with IBS on battery negative terminal:  
Do not under any circumstances pull/lever off pole shoes by force.  
Do not under any circumstances release socket-head cap screw of IBS.
- Detach terminal of battery negative lead from car battery and second battery if fitted. Cover battery negative terminal(s) and secure.
- When work is carried out on the electrical system, faults may be caused in the fault memories of some control units when the battery is connected.
- When fitting terminal for battery negative lead: Tightening torque 61 21 1AZ .

**After connecting battery:****Important!**

Required in various models:

- Initialize sunroof
- Vehicles with AFS only: Set steering angle
- E36 only: Initialize power windows

**Vehicles with a two-battery system**Starter and equipment batteries

A two-battery system has a starter battery circuit and an equipment battery circuit. A supplementary control unit monitors both battery circuits. Depending on the situation, the battery circuits are connected to or isolated from the

supplementary control unit via an isolating relay.

Two AGM batteries are used as a storage battery; the design and features of these batteries are described in BMW Technology (SBT) 610102 (005).

### **Important!**

These batteries must not under any circumstances be charged with a voltage in excess of 14.8 V. Rapid programs must not be used either.

#### Receiving/giving starting assistance via jump start terminal

The engine can be jump-started with an external voltage supply via the jump start terminal on the right side of the engine compartment.

#### *Note:*

The starter battery is isolated from the alternators when the engine hood is open.

Giving starting assistance via the jump start terminal is thus limited by the capacity of the starter battery when the engine hood is open.

#### Charging starter and equipment batteries via jump start terminal

The starter battery is charged as a matter of priority by a charger connected to the jump start terminal. The voltage at the starter battery is the decisive factor in determining whether the equipment battery is also included in the charging operation. The supplementary control unit automatically detects a charging operation at a charging voltage at the starter battery of  $\geq 13.5$  V. The isolating relay is closed and thus the equipment battery is connected in parallel. Both batteries are now charged.

#### Prerequisite:

- Terminal 61 inactive
- Terminal 15 inactive

If terminal 15 becomes "active" during the charging operation, the isolating relay is opened immediately and again only the starter battery is charged.

#### *Note:*

When the engine hood is open, the isolating relay is also opened in normal operation when the engine is running.

A special mode can be set by means of diagnosis for workshop/garage operation. The isolating relay is closed from terminal R in this operating mode. This mode is automatically reset once a distance of 5 km has been driven.

#### Trickle charging

Increased closed-circuit current consumption can be compensated with the aid of the battery trickle charger (special tool 61 2 410 ) via the jump start terminal.

### **Important!**

The cigarette lighter is isolated from the electrical system after terminal R "OFF" on a timed basis (60 mins.), thereby interrupting charging of the equipment battery via the cigarette lighter. This is prevented if the battery master switch (on the right side of the luggage compartment behind the panel) is turned on and off again twice within 2 seconds. (Cigarette light battery charging function).

Refer also to Service Information bulletin "Instructions for charging battery" (SI) 61 08 01 (776)