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TECHNOLOGY NEWSLETTER
No.3 - December 2010

INSTALLATION OF BATTERIES WITHOUT A BEM CODE IN AUDIS

What happens when a battery without a BEM (Battery Energy Management) code is installed in a vehicle? Banner has had to consider this question in the case of Audi.

BEM = Battery Energy Management
In view of the increasing use of electrical power in modern vehicles, the battery constitutes a vital component. Therefore, in order to guarantee its long service life in spite of higher loads, vehicles such as the Audi A6 employ intelligent energy management.

Function
The massive rise in on-board power requirements in the latest car generation places fresh demands on batteries, especially in connection with micro-hybrid applications involving stop-start technology and brake energy recuperation. The BEM incorporates ongoing parameters such as the charging status and the age of the battery. This data is then reported to the vehicle computer, which decides upon the energy balance in the vehicle and if required, limits the use of comfort consumers such as seat heating or air conditioning and provides the driver with a warning. Where possible, the aim is to constantly guarantee engine starts.

Differing systems
The majority of automotive manufacturers such as BMW operate with an open system, i.e. the independent retrofitting market can install a suitable battery without the need to reprogram the vehicle electronics. However, producers like Audi employ a closed system and allocate so-called BEM codes for original retrofitting batteries. Unfortunately, such codes are unavailable for free spare part batteries.

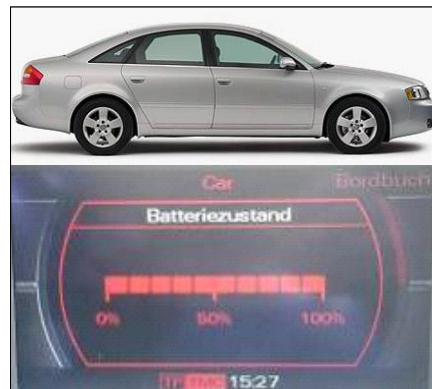### Installation of batteries without a BEM code
Basically, the installation of a non-BEM free tested battery is possible as exemplified by Audi. However, a battery must be employed that possesses OEM quality (preferably Power Bull and in the case of an original AGM battery, replacement with a Running Bull), is of identical dimensions with the original battery and also has the same labelled performance as the original.

Self-teaching system
In the case of an elderly battery, the vehicle system stores the term "defect battery". Accordingly, if a new battery is installed without the entry of a BEM code, initially the vehicle does not recognise the presence of a replacement. Therefore, the energy management system must either be informed of the new battery status via a BEM code input, or learn the new battery status. The more trigger events (impulses, signals, e.g. starts, cold starts) experienced by the battery, the faster this process is completed. The vehicle computer then successively releases the previously limited systems, e.g. the full performance of the air conditioning system.

No safety risk
If a high-quality battery is installed without the input of a BEM code, this neither constitutes a safety risk, nor a possible danger of damage to the vehicle electronics or other components.

Source: Audi A6-wiki

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