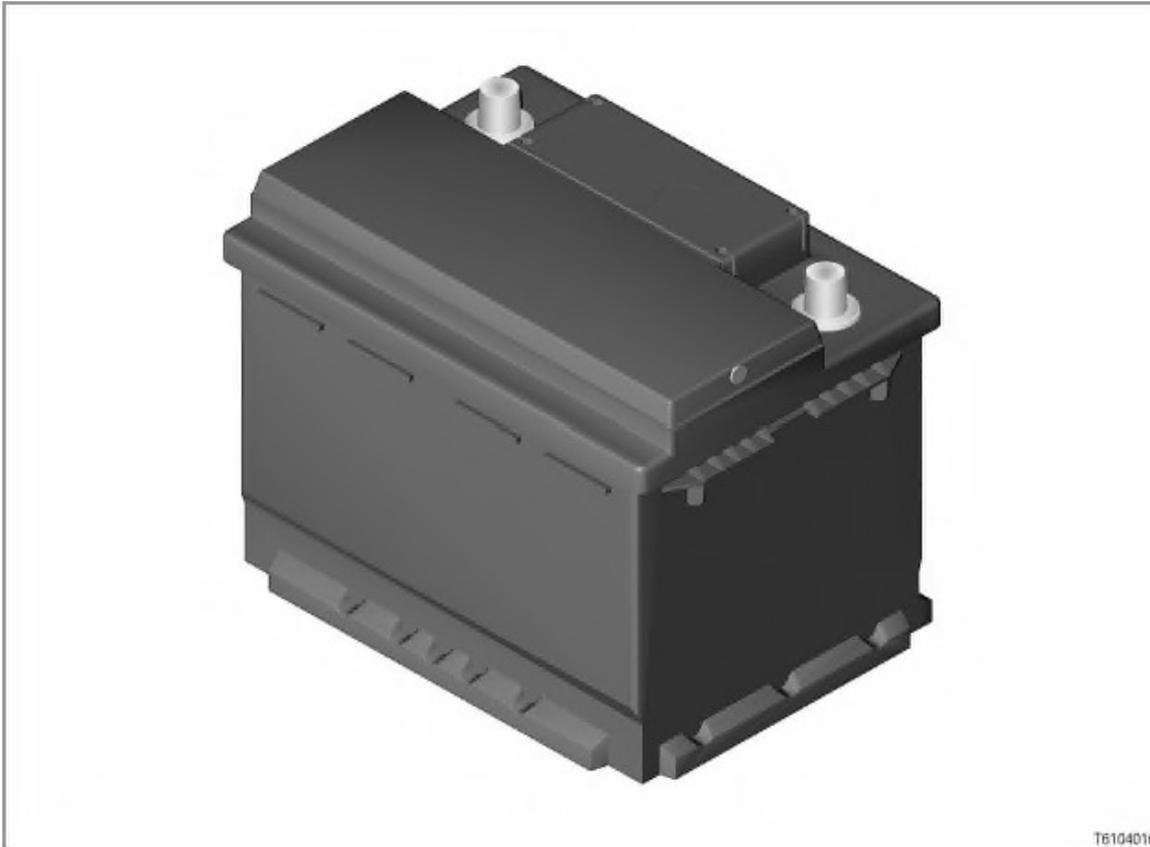


## AGM battery

All models from E39



### Introduction

In September 2002, the first so-called VRLA batteries, better known as **AGM batteries** came into use. (VRLA means **v**alve-**r**egulated **l**ead **a**cid, i.e. lead acid battery with pressure relief valve; **AGM** stands for **a**bsorbent **g**lass **m**at, i.e. absorbent glass-fibre fleece)

AGM batteries are installed in models with electrical consumers that have high energy requirements. Depending on the equipment fitted on the vehicle, AGM batteries (90 Ah) are currently installed in the following development model series:

- E39
- E46
- E53
- E60, E61, E63, E64
- E65, E66
- E70
- E81, E87, E90, E91, E92, E93
- R56

AGM batteries will be fitted as standard as part of CO<sub>2</sub> measures (e.g. intelligent alternator regulation or automatic engine start/stop system).

The continuously increasing energy requirements of modern vehicle electrical systems demands ever more efficient battery solutions. A modern luxury-class vehicle has some 100 actuator motors that have to be fed with electrical current.

Then there are the safety, environmental and convenience elements, which are increasingly becoming standard, for example:

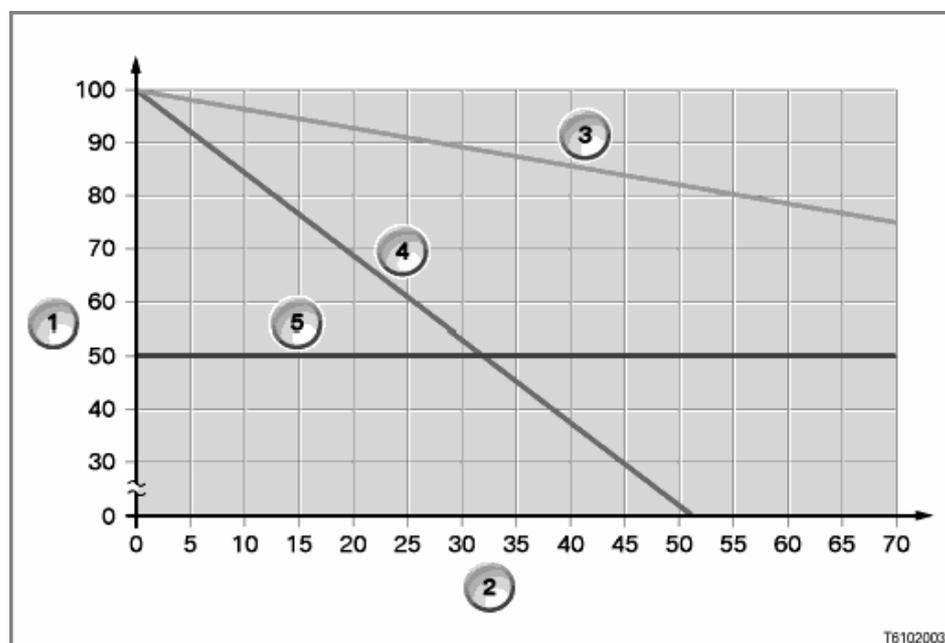
- Anti-lock brake system (ABS)
- Dynamic Stability Control (DSC)
- Electro-mechanical power steering (EPS)
- Heated catalytic converter
- Electronic chassis control
- Air conditioning system
- Navigation system

Current consumption is considerable even when the vehicle is not in use.

The slightly higher price and greater weight for the same size battery are fully compensated for by the following benefits:

- greatly longer service life
- improved starting reliability at low temperatures
- reliable starting of engines with high starting current requirements, e.g. high-performance diesel engines
- 100% maintenance-free
- low risk in the event of an accident (reduced environmental risk)

### Service life of AGM batteries



| Item | Description            | Item | Description           |
|------|------------------------|------|-----------------------|
| 1    | Available capacity [%] | 2    | Mileage [thousand km] |
| 3    | AGM battery            | 4    | Lead-calcium battery  |
| 5    | 50% capacity limit     |      |                       |

In contrast to conventional lead-calcium batteries, the sulphuric acid in a battery with fleece technology is not held freely in the battery housing.

Rather, 100% of the sulphuric acid is bound into the mats of the glass-fibre fleece (separators). For this reason, no acid can escape if the battery housing is damaged. In addition, the AGM battery is sealed to be airtight. This is possible because the gases are converted back into water by the permeability of the separators.

### Brief description of components

AGM batteries can be recognised by the black housing and the lack of the so-called "magic eye". [more ...]

### Notes for service staff

When handling AGM batteries, certain special factors must be taken into consideration with regard to battery renewal and installation location.

- General note: [more ...]
- Diagnosis: ---
- Encoding/programming: ---

Subject to change.