

Lead-calcium batteries

All series

Situation: Lead-calcium batteries have been used in BMW vehicles since 1995.

Essentially, this battery technology offers the following advantages:

- longer service life
- completely maintenance-free
- hydrometer (the so-called "Magic Eye") as indicator of charge state and acid level

The technology of these batteries means that they are only available with acid filled. There are no sealing plugs, or these are covered over with a label. It is no longer necessary to top up the battery with distilled water.

The prescribed battery care is required.

Affected vehicles: All series

Action: The specified battery care procedures must be observed.

If a battery is replaced, it is essential to ensure that a replacement battery of the same capacity/dimensions is chosen that corresponds to the Parts Catalogue and which uses the technology described in this Service Information bulletin. In vehicles fitted with a lead-calcium battery, only another lead-calcium battery or an AGM battery must be fitted as a replacement.

Procedure: The following principles are to be observed for batteries:

- The hazard avoidance instructions and explanations printed on the battery must be observed.
- Inadequately charged batteries are at risk of freezing.
- Extremely discharged batteries with an idle-circuit voltage less than 12.0 volts have suffered preliminary damage. This can lead to premature failure.
- Storage temperatures exceeding 35°C accelerate the process of self-discharge.

1 Store batteries

The instructions listed below must be observed in order to avoid damage to store batteries:

Checking the battery

Battery voltage should be checked every three months.

Within this period, the battery voltage may drop due to self-discharge. **A fully charged battery in new condition delivers a voltage of at least 12.7 volts.**

Proceed as follows, depending on the battery voltage:

- No further actions are necessary if the battery voltage is greater than 12.3 volts.
- If the battery voltage is between 12.0 volts and 12.3 volts, the battery must be recharged for at least 12 hours.
- If the battery voltage is less than 12.0 volts, the battery is unserviceable and must be disposed of at the expense of the workshop.

In the case of a store battery, the colour of the hydrometer (the so-called "Magic Eye") may remain black after recharging although the battery shows an idle-circuit voltage of at least 12.7 volts. This is caused by acid lamination within the battery.

Such batteries are fully charged and serviceable in spite of this.

In order to remove the acid lamination, the battery should be slowly turned over once. This will cause the Magic Eye to turn "green" again.

Recharge the battery fully before handing the vehicle over to a customer.

Storage temperature in the local parts store

The storage temperature must not fall below 10 degrees Celsius and must not exceed 35 degrees Celsius. If the storage temperature rises above 35°C, the battery voltage must be checked at monthly intervals.

Storage period

Batteries whose storage life date has passed (see storage life label on the rear of the battery with the inscription "Usable until month/year") must be scrapped, since a battery older than this (batteries older than 10 months) has preliminary damage. Batteries must be disposed at the expense of the workshop concerned in compliance with local stipulations.

Always proceed on the principle of "first in/first out", i.e. the batteries which have been in storage the longest must be taken out first.

2 Batteries in compound or store vehicles

Recharge the battery as specified in the charging calendar

Please refer to Service Information bulletin "Battery charging calendar and battery tag"

SI 61 03 98 (387).

In the case of batteries in compound vehicles, the colour of the hydrometer (the so-called "Magic Eye") may remain black after recharging although the battery shows an idle-circuit voltage of at least 12.7 volts. This is caused by acid lamination inside the battery due to the lack of vehicle movement. Such batteries are fully charged and serviceable in spite of this. To remove the acid lamination, remove the affected battery, turn it over once and install again.

Wait at least six hours in order to correctly measure the idle-circuit voltage. Only when this time has elapsed can it be guaranteed that any existing surface charges that could falsify the measured voltage value have been dissipated.

If store or compound vehicles are subjected to ambient temperatures of less than 10°C or greater than 35°C for longer than one month:

Remove the batteries and store them in a suitable place.

For details of the procedure to be followed, see point 1.

Recharge the battery fully before handing the vehicle over to the customer.

3 Batteries in showroom vehicles

Vehicles on which electric functions are not demonstrated

Recharge the battery as specified in the charging calendar

Please refer to Service Information bulletin "Battery charging calendar and battery tag",

SI 61 03 98 (387).

Vehicles on which electric functions are demonstrated

The battery idle-circuit voltage must not fall below the minimum of 12.0 volts.

4 Batteries in operated vehicles

Note the colour of the hydrometer during each inspection or battery check and proceed as follows:

Green = Battery charge adequate
(no action necessary)

Black = The battery is inadequately charged
(recharge the battery fully)

Pale yellow = Acid level too low
(replace battery)

If, within the framework of maintenance or inspection work, auxiliary electrical devices in the vehicle are switched on, this current consumption must be equalised by the connection of a charging unit authorised by BMW.