



This Service Information bulletin supersedes SI B61 18 08 **dated September 2014.**

**NEW** designates changes to this revision

## SUBJECT

### **Battery Maintenance Requirements: Battery Care**

## MODEL

All (new vehicles in BMW center inventory)

## SITUATION

Proper battery maintenance is vital when BMW vehicles are in your center's inventory. Allowing a vehicle's battery voltage to drop below 12.0 volts (12.0V) permanently reduces the battery life expectancy and can lead to premature failure of the battery. For vehicles, equipped with a high-voltage battery (hybrid/electric vehicles), failure to properly maintain this battery may lead to a greatly discharged HV battery, requiring replacement.

We provide a flexible battery maintenance system every BMW center can use in accordance with their particular needs. This bulletin explains the Battery Charging Calendar (see attachment), charging systems and a simplified tool and battery voltage checking procedure below.

## INFORMATION

To transition the reimbursement of the battery maintenance step from the QCI to the new Battery Care Program described in the procedure section, a reduction in the QCI time allowances was necessary.

For more information on the updated QCI payment and the related claim submission information, please refer to [SI B01 01 08](#).

Your center will received a separate payment for properly maintaining batteries on in-stocks vehicles.

## **PROCEDURE - 12V BATTERY SYSTEMS (INCLUDING HYBRID/ELECTRIC VEHICLES)**

### **New Vehicles Arriving at Your Center**

Upon receipt of a new vehicle:





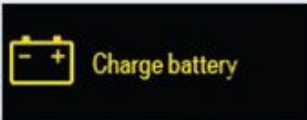
1. Remove the battery log form (see attachment) from the glove compartment and complete section "A." The vehicle also arrives marked with a color-coded round sticker on the windshield. Do not remove this sticker under any circumstances until the vehicle is retailed. The respective color (four options) indicates that the vehicle's battery voltage must be checked in accordance with the new calendar on a four-week cycle.
2. Check also if the vehicle is due for charging according to the charging calendar on the battery log form (vehicle is assigned to the color of the current week!). If yes, check the State of Charge (SoC). If it is below 71% (12.5V), recharge the vehicle before it goes into storage. On hybrid/electric vehicles, the battery must be charged if the SoC is below 25% or one or fewer blue bars are present on the SoC display. This situation can occur because of delays in transporting the vehicle to the dealer.

NOTE: The HV battery in the BMW i3 and i8 cannot be charged above 30% when transport mode is active.

3. Check the instrument cluster for battery-related check control messages to determine the condition of the 12V battery. Reference the chart below.

Open the vehicle and make sure it is in transport mode. Press the Start/Stop button and wait until all check control messages are displayed. Refer to the chart below for all applicable check control messages pertaining to the 12V battery.

### Vehicle Check Control Displays and Actions

		F-Series:	E-Series:
State of charge	Action		
> 60%	None	 OK Battery ok! State of charge x%	
30 < x < 60%	Recharge	 Battery! State of charge x%	 Charge battery
< 30%	Replace battery	 Replace battery!	 Charge battery

GRUSB6113-08

If an indicator shows that the battery is less than 30% SoC (12 V), perform the following steps:

1. Enter a comment with the VIN in the Bill of Lading (Delivery Receipt).
2. Perform energy diagnosis to check if there is a vehicle malfunction.
3. Submit a warranty claim with the comment: "Battery was delivered heavily discharged."

Using a fluke meter upon delivery is not recommended, because an accurate voltage value is only guaranteed after the 12V battery has been sitting for at least 4 hours.

4. The new vehicle battery maintenance tracking system provides for three distinct flexible options:

#### A. The vehicle goes into storage (back lot) or to a new display (not in the showroom).

- The vehicle may or may not be in Transport Mode.

A four-week charging cycle and calendar have been established for these cases.

Recharge the battery whenever the voltage is less than 12.5V or 71% SoC. BMW recommends using the LED 12V Charging Indicator to determine if a certain vehicle has to be recharged. (For testing and charging equipment, refer to [SI B04 23 10](#).)

This LED indicator has to be connected to the vehicle permanently, and eliminates the need to unlock the vehicle for measuring the SoC of the 12V battery. The LED indicator display colors listed below apply to the charging calendar's SoC thresholds, and are as follows:

Green: Voltage is > 12.5V (71% SOC)

Yellow: Voltage is between 12.0V and 12.5V => Recharge

Red: Voltage < 12.0V (30% SOC) => Replace battery on new vehicles

Every time a battery is checked, record the voltage in **section "B"** of the BATTERY LOG FORM. Additionally, if equipped, the HV battery SoC must also be checked at these intervals and charged if below 25% or one blue bar in the SoC display. **IMPORTANT: The LED indicator has to be connected to the vehicle for at least 4 hours in order for it to indicate the correct battery condition!**

### **B. The vehicle goes into the showroom or a similar display area.**

- The electrical system is "Customer ready"

And

- The vehicle has been taken out of Transport Mode using the BMW Diagnosis System.

When on display in the showroom, the vehicle consumes energy frequently and unpredictably due to showroom traffic. A four-week charging cycle will not suffice because of the increased current draw on the battery: frequent electrical component usage (demonstrations, product familiarization, etc.).

To ensure battery charge is maintained, permanently connect the battery via the under hood charging terminals to a suitable power supply ([SI B04 23 10](#)). For hybrid/electric vehicles, the HV battery must still be maintained on the four-week charging cycle, since the power supply will NOT charge or maintain the HV battery.

If the showroom vehicle battery has to be disconnected due to state regulations, check the battery voltage on a regular basis to ensure state of charge is maintained above 12.5V or 71% SoC. We recommend default charging every night.

Note 1: For those BMW centers which have established their own working battery maintenance procedure which fulfills BMW guidelines, Section C can be used to track the charging of those vehicles.

**For BMW ActiveHybrid vehicles:** Refer to [SI B61 37 12](#) for special High-voltage Battery care instructions when using an external 12 volt battery charger.

### **C. The vehicle battery has been disconnected to minimize the draw for storage purposes.**

With the battery draw minimized, a 12-week charging cycle can be followed. Use section "D" of the BATTERY LOG FORM to document when the charging has been performed.

The columns on the form are identified by the colors white, red and green of the 12-week charging calendar, designating the months when the vehicles are to be charged. The windshield labels can also be used to track these vehicles, with the exception of the 4th color, yellow. Therefore, vehicles received with a yellow label will need to be reassigned another color.

The 12 week charging cycle requires the battery to be recharged at every check.

Since BMW uses only maintenance-free or AGM batteries, DO NOT ADD DISTILLED WATER!

If, at any time, the battery open circuit voltage should drop below 12.0V, or a battery replacement is indicated during the CBS handover inspection, perform Energy Diagnosis (refer to [SI B61 13 05](#)) to determine the cause. Any necessary repairs should be carried out and the battery **MUST BE REPLACED**. The replacement battery must be registered using the service function in the diagnosis equipment.

Dispose of all batteries properly, observing legal regulations.

### Charging Procedure:

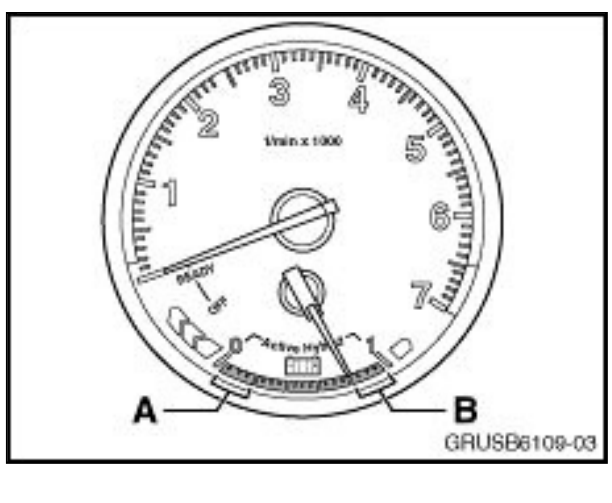
Battery charging must be performed using an approved battery charger (recommended charging voltage 14.8V). Refer to [SI B04 23 10](#) for recommended chargers.

For an optimized charging procedure, the ambient temperature should be **between 60°F and 75°F**. Under these conditions, the battery can be considered fully charged when the charging current **has fallen below 2.5 Amps**.

Charging below 60°F should be avoided if possible, since the capacity of the battery to take up current is reduced and the charging time is extended considerably. However, if provisional charging **below 60°F is performed, the charging voltage must be set to 14.8V**. Charging shall be discontinued no earlier than when the **charging current falls below 1.5 Amps**.

### PROCEDURE FOR HIGH-VOLTAGE BATTERY PACKS (HYBRID VEHICLES)

High-voltage battery packs should be checked at the same maintenance intervals as for 12 volt batteries.

	<p>The charge status of the high-voltage battery pack is shown in the instrument cluster. If the charge indicator displays a state of charge below 25% or one blue bar on the gauge (A), the high-voltage battery pack must be recharged until the charge indicator displays a value in the upper quarter (B). On the battery log form, charge indicator positions A or B should be logged as follows:  A = 0 or 1/4 (depending on actual needle position)  B = 3/4 or F (depending on actual needle position)</p>
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Hybrid vehicles:

- Charge the high-voltage battery pack by starting the engine and letting it idle until a SOC > 75% has been reached (approx. 15min). If the vehicle is inside a building, exhaust extraction must be used. If the vehicle is outside, the vehicle must be in a secure area.

Electric vehicles:

- Connect an approved 110V or 220V charging cable to the vehicle's charge port until SoC of  $\geq 30\%$  (in transport mode, maximum SoC is limited to 30%).
- The 12V battery is very small. On an i3, it has a capacity of only 20Ah, but is permanently charged by the high-voltage battery.

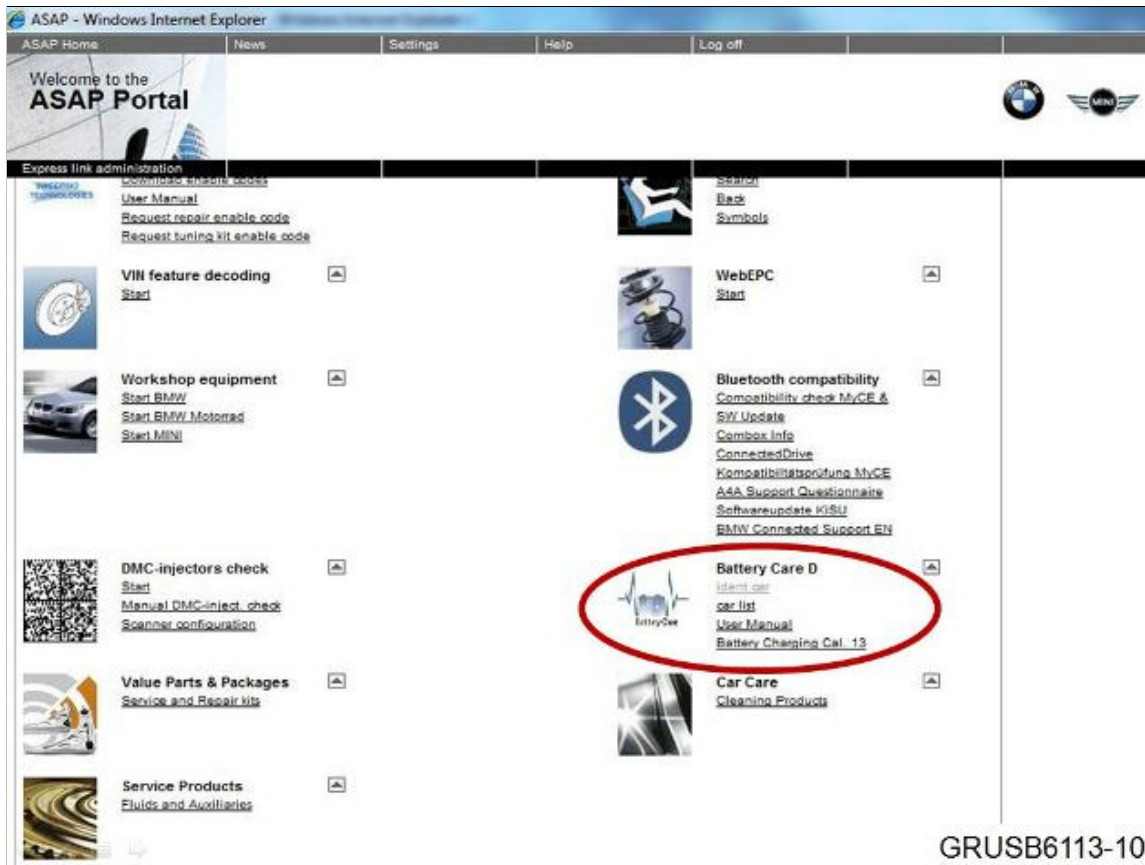
Note: When the high-voltage battery goes to SoC of 0%, the 12V battery will discharge quickly.

## New Vehicle Delivery

The CBS Handover Inspection must be performed as the last process step, immediately before delivery to the customer! Refer to Service Information bulletin “New Vehicle Preparation and Maintenance Requirements” for the affected vehicle model.

**IMPORTANT: In addition, a final check with “Battery Care D” has to be performed on all vehicles (including hybrid and electric vehicles).**

“Battery Care D” is a tool available in the ASAP Portal: Dealerspeed>ASAP Portal>Service/Technic>“Battery Care D”



**NEW** The tool checks if the battery was ever heavily discharged based on key data.



The system requires internet access and a BMW Key Reader (no workshop server connection is needed). Perform this check using the steps below:



1. The vehicle key has to be updated as follows:

## DATA TRANSFER SHORTCUT

E-Series(e.g. E90) & F-Series (e.g. F10)

1. Get in the car and close door.
2. E-Series: Insert key in ignition.  
Vehicle instruments light up.  
F-Series: Press Start/Stop 2x.  
Vehicle instruments light up and go out.
3. Press following combination:
  - a) Press central lock button and hold.
  - b) Press Start/Stop button.
  - c) Release Start/Stop button.
  - d) Release central lock button.
4. F-Series: Hold front edge of the key directly to the key-symbol on the steering wheel column. Remain still. CC notification "Updating service data" appears.
5. A gong after aprox. 10 - 15 sec. (E-Series) or aprox. 3-5 sec(F-Series) indicates that the data transfer is complete. F-Series only: Together with the gong the CC notification goes off!  
No gong at the end, indicates an error!

GRUSB6113-09

### Important hints:

a) For all vehicles with the Lock/Unlock button on the door (e.g., X3 MY 2014 and newer): Press the lock button in order to perform the key update.



b) For all vehicles with the new remote key style (e.g., X5 MY 2014 and newer):



2. Let the Key Reader read and store the key data.
3. Open **“ident car”** and press the **“Take over key data”** button.
4. When the application shows **“Battery OK”** or **“Charging battery”** in the **“Description”** field, the battery was never heavily discharged (SoC < 12V) in the past.
5. Double-check if the right car is displayed **and press the “Save.”** If the Save button is not displayed, the key data was either not updated successfully or a key with old data was provided.
6. Finally, press the **“Log off vehicle”** button when the car leaves the inventory upon customer delivery.

If the battery application shows **“Replace battery,”** the battery was heavily discharged in the past and must be replaced. After that, new key data has to be recorded in Battery Care D. The status has to be switched to **“Battery OK”** again.

Upon the sale of a vehicle, its BATTERY LOG FORM should be removed from the BATTERY CHARGE LOG (binder) and filed in the vehicle file, to be available for future reference.

Make sure that the vehicle will be handed over with a minimum state of charge of 12.5V or 71% SoC. To ensure that the battery remains fully charged, start the engine before demonstrating the operation of components to the customer at the time of delivery.

#### **GENERAL INFORMATION**

Note that the procedures outlined above are meant to be guidelines to assist BMW centers in assuring a sufficient state of charge of vehicle batteries at all times. Following these procedures, however, will not

**guarantee** a sufficient state of charge on all batteries: there may be exceptional cases of excessive current draw through very frequent movement of back lot vehicles, for example, which may call for more frequent recharging than otherwise necessary.

The above guidelines for proper battery maintenance are meant to provide maximum flexibility for every BMW center. Regional BMW personnel will be happy to assist with setting up an effective charging and monitoring program.

#### **PARTS INFORMATION**

Refer to the attachment to this bulletin for the procedure flowchart.

<b>Item No.</b>	<b>Description</b>	<b>Quantity/Price</b>
SD 91-001	Windshield labels - white (reusable)	10 per sheet/\$1.00
SD 91-002	Windshield labels - red (reusable)	10 per sheet/\$1.00
SD 91-003	Windshield labels - green (reusable)	10 per sheet/\$1.00
SD 91-004	Windshield labels - yellow (reusable)	10 per sheet/\$1.00
SD 91-006	Battery Log Form	pad of 25/\$3.00
SD 91-007	Battery Charge Log Binder with separators and 75 forms	1/\$40.00

These items are available online at BMW TIS, under Materials Ordering. Refer to bulletin [B10 02 02](#) for instructions on how to place an order.

#### **WARRANTY INFORMATION**

When a new vehicle is reported “sold” with an in-service date, Warranties will review the corresponding battery maintenance information from the Battery Care application and the required key data.

- **NEW** The required and qualifying key read data must be obtained from the vehicle during **the period of 10 days before and 20 days after the in-service date (-10/+20)** that is reported in DCSnet (RDR).

Under this new program, after the first delivery, centers will receive two (2) FRU for properly maintaining a new vehicle’s 12V battery while in inventory.

- The credit centers will receive will be for one (1) FRU reduction, originally included in the QCI labor operation, and one (1) bonus FRU.

**NEW** Battery Care payments for qualifying vehicles will be issued quarterly on your parts billing statement through miscellaneous billing.

**NEW** Vehicle battery failures due to improper or lack of maintenance are not covered and do not qualify.

#### **Center-traded Vehicles**

It is your responsibility to evaluate the battery’s condition on vehicles traded from another center upon arrival. Any issues relating to improperly maintained batteries must be addressed by the centers involved.

#### **Demo Vehicles**

Center demo vehicles are required to participate in the new Battery Care Program, including “Specialty 8,” when the retail status is updated using Retail Type “B-Customer Update Spec8.”

#### **European Delivery Vehicles**



European delivery vehicles are required to participate in the new Battery Care Program. The battery check has to be done on the second delivery in the US.

**ATTACHMENTS**

View PDF attachment [B611808 Flowchart.](#)

View PDF attachment [B611808 Battery Log Form.](#)

View PDF attachment [B611808 BatteryCare Application Manual.](#)

View PDF attachment [B611808 BatteryCare Process Flyer.](#)

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