



SIB 61 13 05

2021-04-14

Discharged Battery: Energy Diagnosis Must Be Performed

This Service Information Bulletin (Revision 3) replaces SI B61 13 05 **dated October 2020**.

What's New (Specific text highlighted):

- Procedure updated

MODEL

All vehicles produced from 3/2004 (except I-Bus vehicles)

SITUATION

The electrical system of BMW vehicles has been subject to an ongoing development process over the last few years. This has led to increased demands being placed on the battery. This document covers important information for the dealer on how to handle “discharged battery” complaints.

In order to properly repair the vehicle the first time in the workshop, it is very important that the diagnostic test plans are performed to completion, with all results taken into consideration.

Without performing the energy diagnosis test plan, the root cause of the discharged battery cannot be identified. This increases the chances of a repeat repair.

CAUSE

A discharged battery can have various causes, most of which do not concern the battery itself. A failed battery is often the symptom and not the cause. A fully serviceable battery fails when an electrical component causes the battery to discharge; the battery becomes internally damaged and must be replaced.

For more information, refer to <https://batteryuniversity.com/> For this reason, replacing the battery is not usually a permanent repair. The cause of the discharged battery must be analyzed in order to guarantee a proper repair.

PROCEDURE

Before starting diagnosis, refer to the attached flowchart, which will guide you through this procedure and can be used as a reference guide for all E-Series and F01/F02 vehicles produced up to 9/2010.

All vehicles, starting with the F01/F02 produced from 9/2010, are equipped with advanced onboard battery diagnostics. This advanced battery diagnosis is now part of the energy diagnosis test plan with the introduction of ISTA 3.41.

- For vehicles **with auxiliary battery faults**, perform the applicable test plan and proceed with the test plan recommendations
- For all models **with other battery faults (specifically the 12 V battery)**, the “Energy Diagnosis” is to be performed for all discharged battery complaints

1. Fault analysis (Energy Diagnosis)

Complete the energy diagnosis test plan on every vehicle with a discharged battery.

There are currently two paths to access the energy diagnosis test plan:

- If a power management fault is stored, ISTA will select the energy diagnosis test plan automatically
- The test plan can also be selected manually: “Function structure>Body>Power supply>Energy Diagnosis”

2. Once the test plan is run, the number [1] “Most Likely Cause” is automatically displayed if any faults are found by the test plan. Complete the test plan by processing all the “Most Likely Causes.” Start from [1], where the most recent cause of a discharged battery is listed. If no “Most Likely Causes” are found, the results screen will display: “Most Likely Cause (0),” is undetermined.

If no “Most Likely Causes” are found, the results screen will display: “Most Likely Cause (0), is undetermined”, you can work through the general information section if additional diagnosis is needed to

determine the cause of the battery failure.

3. The following is a list of reasons for a discharged battery, indicated by the results of the test plan.

A. Examples of vehicle faults

- Battery fault (aged battery – only on IBS-equipped vehicles)
- Alternator fault
- Vehicle is not entering sleep mode (sleep mode prevented)
- Vehicle is constantly woken from sleep mode
- Closed-circuit current is too high
- Closed-circuit current infringement
- Exhaustive battery charge **(for information only)**
- Terminal 30g-f shutdown due to start capability limit **(for information only)**
- Terminal 30F shutdown due to start capability limit **(for information only)**
- Terminal 30B electric fan or coolant pump after-run **(for information only)**
- Undetermined
- Lights/hazard warning lights left on for too long

“Lights left on” is only considered a vehicle fault and can only be claimed under warranty if the following conditions exist:

1. If other “Most Likely causes” are listed that indicate the battery was already heavily discharged (listed as **for information only** above).
2. If the State of Charge readings for the last 5 days indicate a heavily discharged battery (typically below 40%).

B. Examples of operating faults

- Lights/hazard warning lights left on for too long
- Terminal R or terminal 15 left on for too long (this fault may also be set when the vehicle is in the workshop – if the mileage the fault set is the same as the current mileage of the vehicle)
- Vehicle parked for too long
- Vehicle used when stationary

C. General Information

General information is available in the energy diagnosis test plan and can be accessed at any time. With the introduction of ISTA 3.49.10, additional information is available for the technician for assistance with diagnosis of power management and battery issues.

- **Battery** (displays the current and last five days' values for the SOC and start capability limit)
- **Closed-circuit current monitoring** (only for vehicles equipped with an IBS)
- **Immobilization period** (displays the number of days the vehicle has been parked and not driven)
- **Average vehicle performance** (displays a value and explanation for average journeys in a single numeric value)
- **Load reduction** (displays energy load reduction)
- **Charge states** (displays the amount of time in each SOC range by hours and minutes)
- **Ageing battery** (displays a stress value based on the age of the battery)
- **Battery tests** (for the charge acceptance and start voltage dips added to general information. This makes extended evaluation of the battery possible, allowing potential damage to the battery to be detected, by changing the battery within a 10-minute period and monitoring the amperage charge acceptance of the battery). For BN2000 vehicles (all E-Series and F01/F02 prior to 09/2010) refer to the attachment for more information about the battery test.
- **Battery check control messages** (displays battery related check control messages recorded)

- **History of most recent changes in the test module** (displays the changes in this test module with this ISTA version)
- **Determined fault causes** (displays [1] “Most Likely Cause”)

If a new battery is installed, the “Energy Diagnosis” test plan should be completed prior to registering the new battery. When the battery is registered, the stored energy history is deleted. This may cause the vehicle to return if the root cause of the discharged battery is not determined.

WARRANTY INFORMATION

To claim an eligible faulty battery either under the BMW New Vehicle Limited Warranty for Passenger Cars and Light Trucks or the BMW Original Parts Warranty (eligible In-center workshop repairs), the Energy Diagnosis test plan must be performed to completion.

Exception: Energy diagnosis is not necessary for vehicles with auxiliary battery faults, where the applicable test plan recommends auxiliary battery replacement.

When required, a Midtronics Battery Test procedure must also be performed. The Midtronic battery tester printout(s) must be retained with the repair order.

To assist you in determining the warranty coverage on a battery, please refer to the following guidelines:

Covered under warranty when the results of the Energy Diagnosis test plan are:

- A vehicle fault;
- An undetermined fault; or
- An operating fault such as unfavorable driving profile (e.g., driven extremely short distances) and the Midtronics battery tester or Energy Diagnosis results indicate the battery needs to be replaced.

A “Stand-alone” faulty battery is claimed using the battery defect code listed in AIR.

Other Repairs

If it is determined that some other **covered** vehicle fault and repair caused the battery to fail, the failed battery is to be claimed under the AIR defect code that applies to the failed (causal) component or repair (e.g., alternator, permanent failure).

Not covered under warranty when the results of the Energy Diagnosis test plan are:

An operating fault such as the vehicle being parked too long (vehicle parked for extended periods without proper battery maintenance), battery not maintained, etc.

As applicable to your center, please refer to **SI B01 01 20** or **B01 07 20** for claiming your diagnosis work time, job/repair work time (WT), WT and the repair-related explanation procedures.

QUESTIONS REGARDING THIS BULLETIN

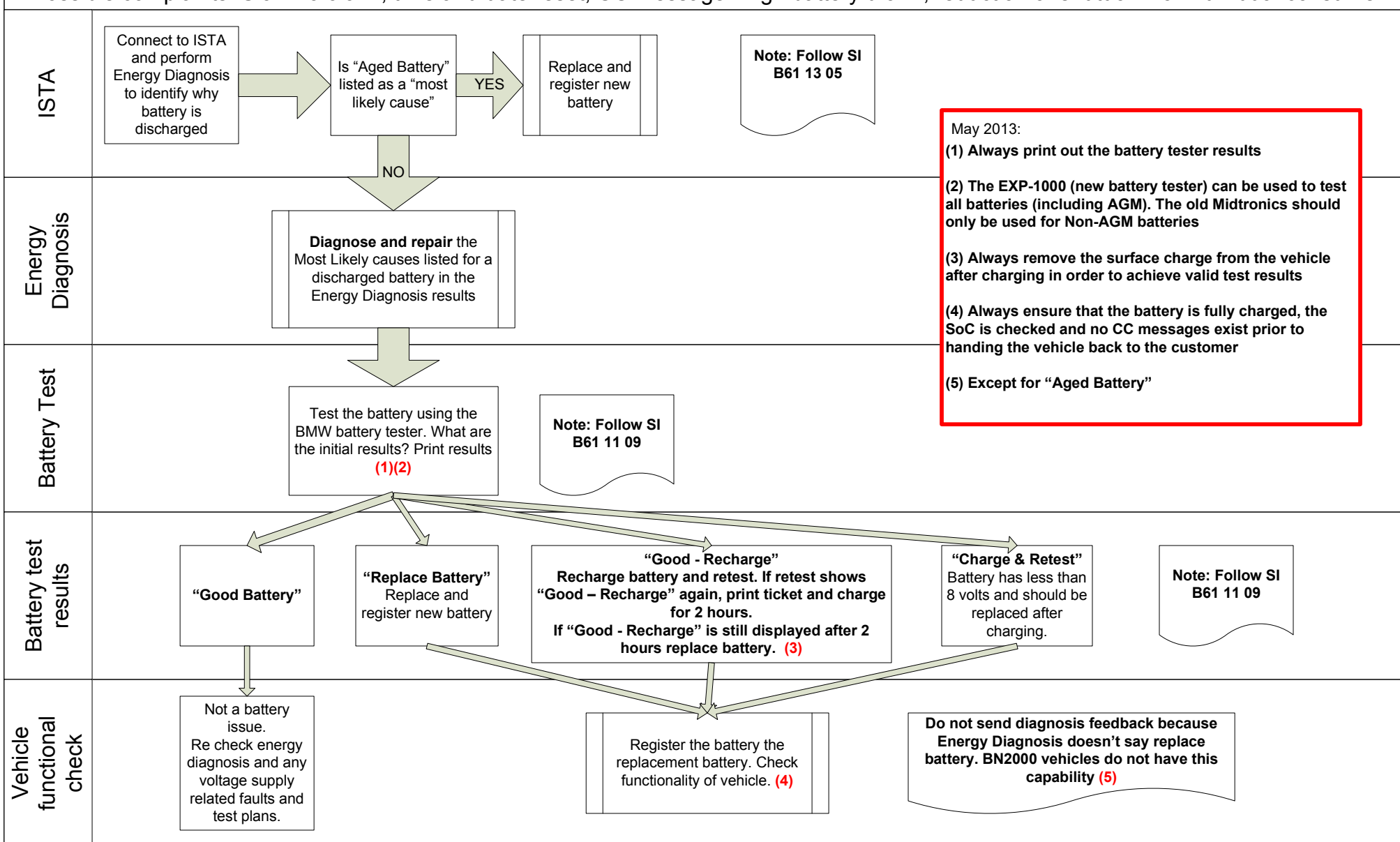
Technical Inquiries	Submit feedback at the top of this bulletin
Warranty Inquiries	Submit an IDS ticket to the Warranty Department or use the chat available in the Warranty Documentation Portal
Parts Inquiries	Submit an IDS ticket to the Parts Department

Supporting Materials

[picture_as_pdf B611305_BN2000_Battery_Diagnosis.pdf](#)

Diagnosis of Battery complaints on BN2000 vehicles (all E-Series and F01/F02 prior to 9/2010) Revised May 2013

Possible complaints: Slow/no crank, time and date reset, CC message "High battery drain", reduction or shutdown of individual consumer



May 2013:

(1) Always print out the battery tester results

(2) The EXP-1000 (new battery tester) can be used to test all batteries (including AGM). The old Midtronics should only be used for Non-AGM batteries

(3) Always remove the surface charge from the vehicle after charging in order to achieve valid test results

(4) Always ensure that the battery is fully charged, the SoC is checked and no CC messages exist prior to handing the vehicle back to the customer

(5) Except for "Aged Battery"