

Foreign Service



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Vehicles are becoming increasingly self-aware with each passing year. It's no longer enough to replace a battery when necessary. Many late-model BMWs also need to know *when* you replaced it.

Last month I discussed a timely trend in higher-end European electrical systems, the absorbed glass-mat (AGM) battery. This time I'll focus on another one, relearning BMW charging systems after battery replacement. You read correctly—*relearning* the charging system!

First I'll recap the AGM battery information. An AGM battery is more *damp* than wet inside because it isn't flooded with liquid electrolyte like a traditional battery is. Also, AGMs are designed to be very low-gassing batteries. These features make them especially well-suited for locations inside the vehicle. Some higher-end European vehicles have an AGM battery somewhere inside the vehicle powering on-board electronics while a separate battery under the hood handles

starting duties. Finally, *fully* recharging an AGM battery safely and quickly requires an AGM-capable charger.

Okay, let's get back to those late-model BMW charging systems. First, the electrical system is so sophisticated that it tailors charging as closely as possible to both the type and the age of the battery. There's a computer, which goes by several different names, that controls the alternator. Whenever you replace a battery, this computer really needs to know because it doesn't charge a fresh battery the same way it charges an older battery. What's more, this computer needs to know if you've updated a vehicle from a conventional battery to an AGM type; it charges the AGM differently than a traditional battery.

Second, the process of updating this alternator-control computer is called *battery registration*. You don't absolutely *have* to register every new battery you install in these late-model BMWs. Ignoring the registration process after replacing a battery won't trigger a DTC or turn on the MIL. However, a savvy BMW specialist warned me that skipping the battery registration process can dramatically shorten the life of a battery in these vehicles, be it an AGM or a conventional battery. For instance, he's diagnosed cars on which a new battery didn't even last a year because it wasn't registered! The charging system could shorten the life of an unregistered battery by charging it too aggressively when it's cold; it also could shorten the life of an unregistered AGM battery by overcharg-

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BATTERY REPLACEMENT HISTORY	
Last battery replacement (km)	0.00
Last battery replacement but one (km)	528392.00
Last battery replacement but two (km)	528392.00
Last battery replacement but three (km)	528392.00
Last battery replacement but four (km)	528392.00
Last battery replacement but five (km)	528392.00

SCREEN CAPTURE BACK

Screen capture courtesy AutoLogic



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ing it, he said. To say the least, premature battery failure can be aggravating for the customer and embarrassing for you and your shop.

Third, several problems can cause premature battery failure. On a late-model BMW, skipping battery registration can be one of them. Don't gamble; always register a new battery on any BMW equipped with MOST Bus—a single-line, fiber-optic ring network BMW introduced in the early 2000s. Typically, the easiest way to identify a vehicle equipped with MOST Bus is to look for iDrive. In turn, the quickest way to spot iDrive is to look for the fancy LCD control display screen up on the instrument panel. Among other things, this display screen shows the driver climate control functions, navigational info, entertainment system controls, etc. (To my knowledge, the lone exception to this is the 2006 3-series cars without iDrive, which still use the MOST Bus network.)

Here's when MOST Bus appeared on the most common BMWs your shop would encounter:

- 2002 for 7-series (E65/66 vehicle platforms);
- 2003 for 6-series (E63/54 vehicle platforms);
- 2004 for 5-series (E60/61 vehicle platforms);
- 2006 for 3-series (E90/91/92/93 vehicle platforms);
- 2007 for X5 series (E70 vehicle platform);
- 2008 for X6 series (E71 vehicle platform).

Fourth, registering a battery is easy but it requires a scan tool that communicates effectively with these BMWs. If you want to service more of these vehicles, shop for scanner updates or a new scan tool that will do the job. The screen capture on page 10 from an AutoLogic scan tool is an example of one of those you'd see during the battery registration. You also could look up battery history on this same screen. Notice that the first entry is "Last battery replacement (km)" and the reading is 0.00. Meanwhile, all the remaining entries are the same value of

528,392 km (about 328,000 mi.). These readings show that if someone has replaced this car's battery, he did not register it.

One BMW specialist pointed out to me that sometimes you can quickly check to see if the car's got the original battery in it. He said that BMW traditionally stamps the battery's manufacturing date on the negative terminal. The date stamp shows the week first, then the year. For instance, "42 05" indicates the 42nd week of 2005; "33 07" would mean the 33rd week of 2007. If the date stamp on the negative battery terminal is fairly close to the vehicle build date, then it's extremely likely that it's the original battery.

Look at the screen capture again. The BMW ace told me that if the battery had been replaced *and* registered correctly, the number in the top box or window would be 1.00. Next, the second entry there would be the kilometer (km) reading when the new battery was registered. Then, the rest of the entries in those little windows would show the vehicle's then-current km (odometer) reading.

Last but not least, you need to know where to find the registration process within the BMW system. A BMW-capable scan tool initially shows a variety of windows or boxes on the screen. Sometimes you'll see a window labeled BATTERY REGISTRATION REPLACEMENT; that choice is a no-brainer. On the 7-series cars, choose the Power Module (PM) window to access battery registration. Otherwise, the most common way to reach the battery registration is through the window labeled DME (Digital Motor Electronics). Just choose the appropriate window and then follow all the prompts.

Hopefully, these basics will save you some headaches. After all, customer expectations here are likely to be much greater than they are for many other vehicles you repair. If nothing else, you know what's required if you decide to subcontract this task to a BMW specialist. **M**