



February 2018 Newsletter

Greetings Fellow Mercedes-Benz Owners!

I hope you and your car are both doing well. February is the shortest month of the year, but now worries - this month's newsletter will be full-sized.

TRIVIA

Last month's trivia question was, "*What does SBC stand for and what does it do?*"

The answer is:

SBC is an acronym for "Sensatronic Brake Control". This is a special electronic system that controls the car's brakes. Instead of a vacuum-operated brake booster used in most cars, SBC uses an electric pump. Sometimes it's referred to as "brake by wire" since the brake pedal is not directly connected to the brakes themselves. The advantages of the system are many, but there are also some reason why it's not longer in use.

Since boost does not come from vacuum produced by the engine's intake, it offers full brake operation even when the engine is not running. Also, it can sense certain actions and automatically respond. For example, if you are running the windshield wipers, SBC assumes it's raining, so it will periodically (and imperceptibly) pulse the brakes to help keep them dry. The computer decides how to engage the brakes based on the vehicle's speed, steering angle, and also how quickly you remove your foot from the accelerator. It can even vary the brake force at each wheel, working with the stability control system, to assist with keeping the car on your intended direction of travel.

The main downside to SBC is that being electrically operated, it requires a lot of power. If the battery or charging system is weak, braking effectiveness can be reduced. Also, the pump motor used to pressurize the system has a finite lifespan. If the SBC system is compromised by low voltage or a failing pump, your ability to brake is tremendously reduced, pretty much to the point of making the car dangerous to drive. Another important concern with SBC is when servicing the brakes, it *MUST* be electronically deactivated using special diagnostic tools, otherwise it could engage during the job and injure the technician or damage the brake system.

For these reasons, SBC was discontinued. It was used in various models, including the SL-Class from 2003-2012, E-Class and CL-Class models from 2003-2006, and most Maybach and SLR models. This is one reason why these vehicles used a dual-battery system. One battery (under the hood) was used solely to start the engine, while a larger battery (in the trunk) was used to power the car's electronics. Although SBC had its problems, it did outperform standard braking systems well when properly maintained.

SMART KEYS

The key that came with your Mercedes-Benz is a complex electronic device. Most modern models use the "SmartKey" which is a sort of "flower vase" shaped plastic fob. Older models use the "switchblade" style. For either type of key, the little button battery inside it is only used for RCL (Remote Central Locking). If that battery dies, you won't be able to lock or unlock the car with the buttons on the fob, but it will still work in the ignition switch to start the car. Yes, even the electronic SmartKey will work without a functional battery inside of it. With a dead key battery, you'll need to use the blade key to lock or unlock the doors. The hidden blade in the SmartKey is released via a small switch on the back of it, near the key ring loop.

Mercedes-Benz uses a very sophisticated anti-theft system making it nearly impossible to duplicate their keys. The only way to get an extra or replacement key for your car is to order it through an authorized Mercedes-Benz dealership. This means that you can't buy a used key on eBay and have it programmed. The dealer will require proof that you own the car before ordering a key, and this can all be handled at the parts counter. The keys come from Mercedes-Benz corporate, so it will take a few days. As you are just ordering an extra key and your car does not have the KeylessGo option. As long as you are just ordering an extra key and your car does not have the KeylessGo option, the key is ready to use when it arrives.

If you have lost a key, it can be disabled. This will require a visit to the service department with your car and all available keys so they can figure out which missing key(s) to disable. If you want a replacement for it, that can be ordered at the same time as the service visit to disable the missing one. If you don't care that a missing key is floating around loose in the world, and you just want an extra key to replace it, there is no need to visit the service department - just order an extra key at the parts counter.

If your car has the KeylessGo feature (where you press a button to start the engine) then the dealer will suggest you need a service visit to obtain a new key. Actually, that is not always true. If you order an extra key through the parts department, it will just need a "teach-in" process before the KeylessGo functionality will work. To do this, park the car in a place where you can safely leave it with the key in the ignition

for a while (at least an hour and a half). Insert the key into the ignition, but don't turn it on. Look for a message on the instrument cluster stating "Vehicle Calculating" or something similar. Leave the key inserted until the message goes away (like I said, about 90 minutes or so), and then switch on the ignition. The KeylessGo functions should now be working. Occasionally, the teach-in can take much longer than 90 minutes, so if the "calculating" message continues to display, just wait it out. If this does not work, then a visit to the dealer or a shop with Star Diagnosis will be necessary to "teach-in" the key.

Of course the old adage "where there's a will there's a way" holds true, and there are some hackers who have developed various methods for producing extra keys without involving the dealer or Mercedes-Benz corporate. We recommend against using these services as they often require disassembling your ignition switch, or even disabling the sophisticated anti-theft system in your car. Yes, replacement keys for your Mercedes-Benz are expensive, ranging from \$200 to \$400, but knowing that your car remains secure and in proper operating order is worth that price.

BRAKE SQUEAL

Do your brakes squeal when you come to stop, especially a gentle, slow stop? Most people think this is a sign that their brakes are worn and need replacing, and many shops will gladly charge you for new parts. The truth is, brake squeal is rarely caused by worn brakes. If your brakes are worn to the point of metal-on-metal, then you'd have more than just annoying noises - you'd experience poor braking performance, pulling, and grinding.

Most brake squeal is actually not coming from the front of the pad where it contacts to rotor. Instead, it comes from the back of the pad where it's squeezed by the caliper, where it's a metal-on-metal surface. When you brake gently, the pad contacts the rotor, but are still able to move a bit from side to side. This vibration causes the the rear metal surfaces of the pad to "chatter" on the caliper, causing the squeal. If you press harder on the brakes, the caliper squeezes tighter and the chatter stops, and so does the noise.

There are several solutions for this. One is in the brake design itself. Some brake pads use a non-metallic insulator on the back that can help eliminate the squeal. Some calipers use spring steel clips to secure the pads so they don't chatter. Even with those methods, the brakes may still squeal. The solution is then to apply a special heat-resistant lubricant to the back of the pads. This does require removing the pads, but is far less expensive than new brakes (which may squeal anyhow).

THIS MONTH'S TRIVIA QUESTION

How did "Mercedes-Benz" get its name?

Send us your answers at info@benzbits.com. We'll announce the correct answer and "winners" in the next newsletter. There are no prizes, just recognition for the right answer!



Thanks for reading! We hope you have enjoyed this month's topics.

Sincerely,

Benzbits

Got questions? Ideas for newsletter topic? Drop us a note - info@benzbits.com

We hope you like our newsletters. If you don't, simply unsubscribe.