

### Brief Technical Summary

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- **What's going on?**

Custom Performance Engineering is proud to announce that we will be offering a re-flash for the MazdaSPEED3 series of vehicles in the coming weeks. We are currently in the process of beta testing, and will be ready to offer this service to the entire Mazda enthusiast community very shortly. SPEED6 and CX-7 users, we have not forgotten about you! We will be offering a flash shortly after the SPEED3 is released.

- **Cool, How do I get it?**

The cp-e™ re-flash will require you to send in your factory ECU to cp-e™, where we will put the new microcontroller code into your ECU. (Yes, we know this is inconvenient, and your car will be down for a few days, but this is for good reasons, please read on).

- **Why doesn't cp-e™ just sell me "magic box" so I can do it myself?**

The answer may surprise you as it's not about cost. There are some very important facts to keep in mind when flashing the Mazda MZR 2.3 DISI series of ECU's:

- 1) Flashing this particular ECU type is a somewhat risky operation. This is due to the internal computer architecture of the microcontroller used in the MZR 2.3 DISI vehicles. It is entirely possible to turn your functioning ECU into a useless "brick" if the flashing operation (which takes a good bit of time) is interrupted by **anything**. Events like power surges, dying laptop batteries, dying car batteries, your best friend tripping over the USB or OBD-II cable, or any other form of silly accident / natural disaster / electrical malfunction will make you the sad owner of a "SPEED-brick". The MSRP of a replacement ECU is approximately \$1200.00, and this is not including labor and towing fees. Since there is an anti-theft VIN code in the ECU, a "bricked" ECU replacement must be done by an authorized Mazda Dealership. With the risks and costs involved, cp-e™ feels that it would be irresponsible for anyone to perform the flashing operation in anything less than optimum conditions.
- 2) Flash memory life cycle? Huh? A little know fact about **all** forms of flash memory is that they suffer from a condition referred to as "Life-cycle-wear-out." Put simply, you can only write to a flash memory so many times before it is no longer able to reliably store data. **Unlike** the type of memory cells and error correcting codes used in USB memory sticks, (and in the cp-e™ Standback™), that offer millions of write cycles; **the flash memory used in the microprocessor in the MZR 2.3 DISI series of ECU has a wear-out limit specified by its manufacturer of 100 cycles!** This is not a lot of "cycles", so flashing your ECU every time you think you want to tweak your tune is really not the best idea. **NOTE: The flash memory is part of that ECU chip itself, and is not replaceable.** You want to be very conservative as to how many times you flash your factory ECU, and resist the temptation to flash often. Why did the makers of the ECU use such a low life-cycle flash memory? Well, they had the very difficult job of putting a very powerful 32-bit computer with a floating point unit, a bunch of peripherals, fairly large and fast RAM memory as well as a very large Flash memory all on the same die for less than the cost of a six-pack of cheap beer!
- 3) The cp-e™ flash is an evolving product. Just like the Standback™, cp-e™ is constantly improving this product with new features and continue to provide excellent customer support in the form of flash updates at very reasonable costs. (For example, our cost to upgrade from Standback 1™ to Standback 2™ is only \$15.00. This is a lot less expensive then our actual cost.) As features get added to our flash, we will offer them to pre-existing flash customers for similar rates.

- 4) The cp-e™ “No Brick” guarantee. We stand behind all of our products, and provide unsurpassed support for our customers. “If we break it we buy it.”

- ***Is the cp-e™ flash compatible with the Standback?***

Yes, absolutely. In fact, they complement each other very nicely. The same design team that brought you the Standback™ (over 2 years ago) is working back-to-back, (pun intended!), with the designers of the re-flash. Because the flash memory of the Mazda ECU can only be safely written 100 times, cp-e™ recommends that users desiring the very most from their vehicle “tweak” their tunes with the Standback™. In addition, all of the features the Standback™ provides (that the flash simply cannot) still function normally. So, if you want to change your boost from “fixed” to a 3D map, you can. If you want to tweak your timing for your local fueling or if you just want to play with your tune, the Standback™ continues to safely provide this to you. In addition, all new and existing Standback™ customers will receive a discount on the cost of the cp-e™ flash.

- ***What things does the cp-e™ flash change?***

Air-fuel, timing, and boost to name just a few. We are working on many more improvements, including improving the throttle plate control, and we will provide more details in the coming weeks.

- ***What is this going to cost me?***

Pricing is still not finalized, but it will come in lower than the Standback™. As always, cp-e™ is striving to provide an excellent product that will cost less than the competition due to in house engineering and manufacturing.

- ***How do I find out more?***

Stay tuned to [www.cp-e.com](http://www.cp-e.com). We will be making more announcements in the coming weeks.

cp-e™

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