BMW Z4 Ignition Service

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Purpose

This document describes the steps taken to repair a “misfire” diagnostic code on the Z4.

Background

I was a little surprised when I went to look for plug wires – to not find any!

This was the first car I had seen where each cylinder had its own set of ignition electronics – rather than one coil and distributor each cylinder had its own ignition coil that attached directly to the top of the spark plug.

Initial Solution

Because the engine was running rough and the computer indicated a 'misfire' code on cylinder 5, I wanted to get the car fixed quickly so it was drivable again.

AutoZone originally sold me, what they "claimed" was an OEM drop-in replacement part ($69.35.) However, when I got home and tried to install it, I ended up with almost an hour of frustration because I couldn't get the wiring into the connector. I *finally* noticed that there was a small tab (see image below) on the left on the working coil, whereas the "drop-in replacement" I got from AutoZone had the tab in the middle of the connector. Since the mating connector has a 'slot' for the tab on the left, this explained why the center tab model wouldn't work.

No doubt this tab is BMWs way of preventing you from using a non-compatible coil in your car.

After returning "not really drop-in replacement" part to AutoZone, I had to settle for an aftermarket part so I bought the Duralast equivalent that was rated for the Z4 ($50.93) and had "NO" tab – so it would fit in all models.

This actually worked fine and got the car running again; however, I was now uncomfortable using this as it was probably not really 100% compatible, and I'd rather have OEM parts, and it was probably time to replace all of the plugs/coils anyway.

I decided to order the official BMW service kit (from FCP Euro) – part number 12137594936kt. The kit costs $268 which is actually less than 6 of the Duralast parts AND includes the plugs!

When the kit arrived, I found out (much to my chagrin) that the Duralast coil I'd used was almost impossible to get out of the cylinder head. I literally had to climb into the engine compartment and pull it with every ounce of strength – I almost couldn't get it out. This was because the Duralast part had a slightly larger flare on the bottom than the OEM part. So, while it was (maybe?) electrically equivalent, it was not mechanically so. Moral of the story – stick to OEM parts.

Final Solution

Once the OEM Ignition kit arrived, I was able to replace all of the plugs and coils. The process was pretty simple – except for getting the Duralast part out as noted previously.

1. Remove engine cover.
2. Pop top of coil up to disengage cabling (left below) then pull coil out by hand
3. Using a spark plug socket, remove old plug (center below), add Permatex to plug and coil entry, put new plug in to 18ftlbs, insert coil on top of plug, re-attach cabling, pop coil top down.
4. Repeat for all 6 plugs (right below.)
5. Replace engine cover.

This fixed the issue and now the ignition should be set for another 100K miles or so!