

W164 OM642 diesel CAMshaft (CMK) position sensor replacement DIY

Date: 4/15/2016

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INTRODUCTION: My 2009 ML 320 Bluetec diesel was throwing a couple of check engine lights (P0340 and P0341) which I reset once, but they came back again a couple of weeks later. So it was either the circuit to the CAMshaft sensor or the sensor itself. This DIY is applicable to the 2006-2011 diesel OM642 engines (CDI or Bluetec) or any OM642 diesel engine.

- P0340: Camshaft Position Sensor "A" circuit bank or single sensor
- P0341: Camshaft Position Sensor "A" circuit range/performance or single sensor

Do note that is DIY is for the **CAMshaft** rotation sensor and NOT the CRANKshaft sensor (a totally different sensor, and it is usually more problematic as it won't let you start your car). The CMK magnetic sensor detects the camshaft speed (and as a result the position of each piston) and sends it to the car's ECM. This information is used to calculate the time of ignition and the timing of fuel injection required by the engine. With a camshaft sensor slowly failing (like mine), from what I've read, the car is still driveable but it will have reduced performance (abnormal acceleration, stumbling) and loss of gas mileage. Eventually as the sensor totally fails, the car won't start.

TIME: 30 minutes

DIFFICULTY: 3/10 (mostly easy; fussy air filter housing removal)

COST: \$32 for CAMshaft sensor (part number below)

SUPPLIES/MATERIALS

- CAMshaft position sensor (Mercedes PN: 0051531328 (\$75 from dealer) or get an OE part from www.rmeuropean.com for \$32--it looks exactly the same with the same markings and O-ring as the genuine MB part, without the Mercedes logo)
- 3/8 socket wrench with 3" and 6" extensions
- Torx E10 (female) socket [I got a set of 6 variable sizes off Ebay for about \$14]
- 7mm socket (with either a screwdriver attachment or use a 1/4" socket driver)



PROCEDURE

1. Remove the plastic engine cover. Just lift up the black plastic engine cover and put aside.
2. Loosen screw to right air filter housing and rubber engine air hose (goes to turbocharger). Using the 7mm socket, loosen the 7mm screw to the air filter housing/engine air hose. No need to remove the screw totally.

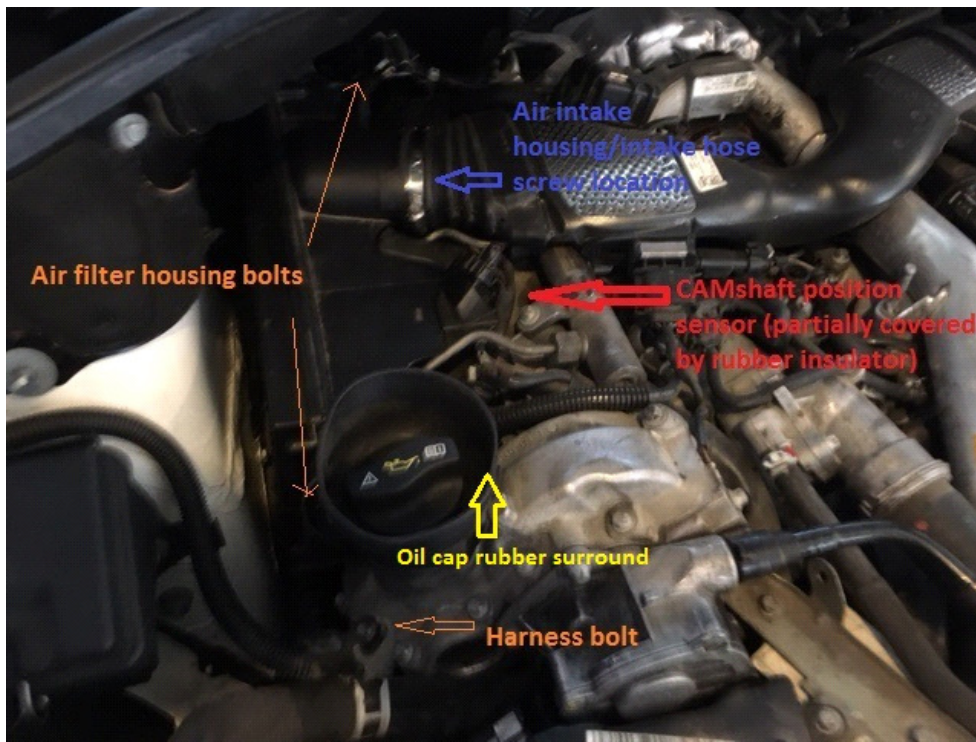
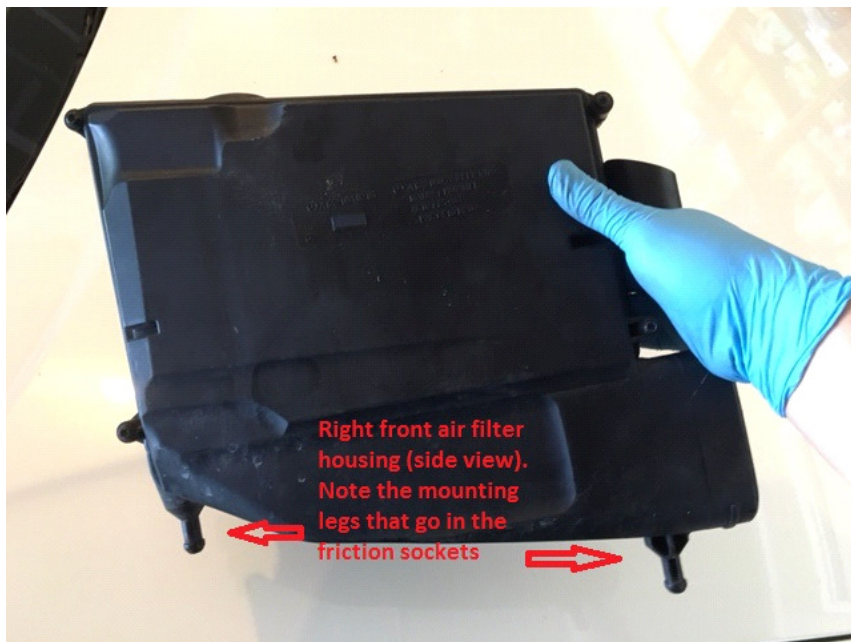


Image 1. Overview of camshaft position sensor job

3. Remove the 2 Torx E10 bolt to the passenger-side air filter housing. One is in the front (easily visible) and one in the back (not so easily visible). See the following pictures to see where the front and hidden back one is. See image 1 but also the following images 2, 4, and 5 for bolt locations.



Image 2. Front view, right front air housing.



Right front air filter housing (side view). Note the mounting legs that go in the friction sockets

Image 3. Side view, air filter housing



Right front air filter housing (rear, side view) bolt #1 location (somewhat hidden)

Image 4. Rear side view, air filter housing.

4. Remove the Torx E10 bolt holding the bracket that holds some wiring harnesses to the right front of the engine. From the front of the air filter housing, it's about 3 inches towards the front of the car. See image 5.

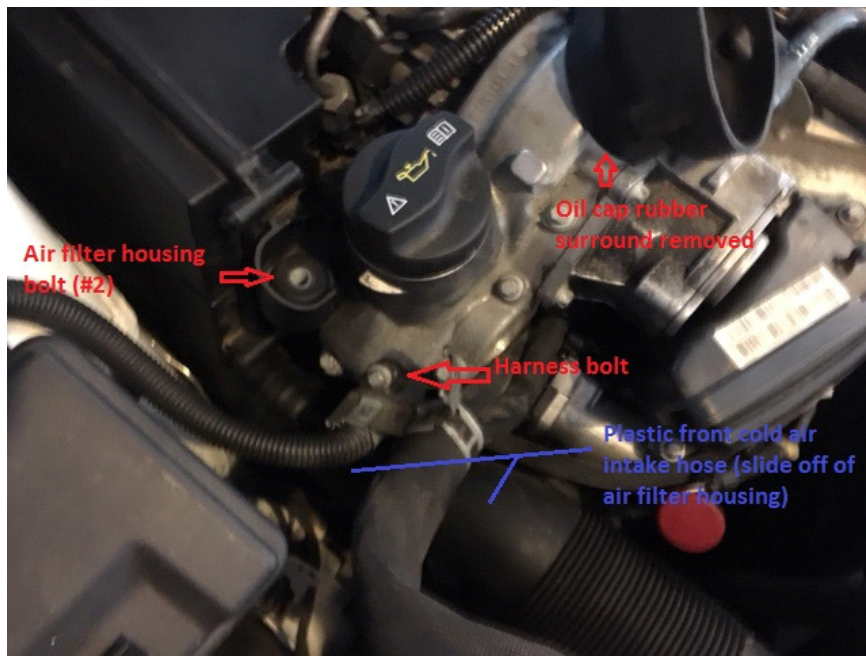


Image 5. Harness bolt location, oil cap surround, and plastic front cold air intake hose

5. Remove the rubber surround for the oil cap. Just pull up and it comes right off. This will give you more clearance to get the right air filter housing off. See images 1 and 5.

6. TRICKY PART. Remove the right front air filter housing. First, slide the [plastic front cool air intake hose \(part of it starts at the front bumper; see image 5\)](#) so that it is disconnected and pushed aside from the right air filter housing. Next, angle the top of the air filter housing towards the right fender so it clears the rubber air intake hose that goes to the turbocharger. Then, lift straight up the air filter housing so the lower anchoring legs (see image 3) clear out of the friction sockets. You'll then need to wiggle the air filter housing forward towards the front of the car so it slides out. [SIDE NOTE: once you get this housing out, consider replacing the air filter inside]

7. Remove CAMshaft sensor. Disconnect the electrical harness connector to the camshaft sensor--you'll see a tab that you need to lift up before you can slide out the end connector (see image 1 and 6). Now, move the rubber insulation block away from the sensor to expose the E10 bolt. Remove the Torx E10 bolt holding the camshaft sensor. Pull the camshaft sensor straight out. You may get a couple oil drops--clean up the sensor mounting surface on the engine (just wipe it up or use some isopropyl alcohol to clean up the area).



Image 6. Camshaft position sensor location

8. Install camshaft sensor and reassemble the car back by reversing the steps. In step 6 of reassembly, make sure the air filter housing anchoring legs are placed back in the friction sockets before you put the screws back on--sort of a pain to do.