

The installation instructions for an intake manifold flap control motor (Inlet Port Shut Off Valve) testing device of Mercedes Benz OM642 engine

1. A brief description of the testing device.

The testing device is designed to replace the defective intake manifold valve opening / closing engines. Its help vehicle ECU work in the same way as the intake manifold solenoid valves engine is connected while the engine is disconnected. In diesel engines with turbochargers, which has the EGR, valve on the intake manifold wall appears resin while engine is on and gradually increasing their amount. As a result, begins to decrease intake manifold hole. Therefore, the intake manifold valve could stop working or even crashes.

1.1. System advantages:

- 1.1.1. Easy installation
- 1.1.2. Significantly cheaper than the original intake manifold flap control motor.
- 1.1.3. In the future, no problems with these parts.

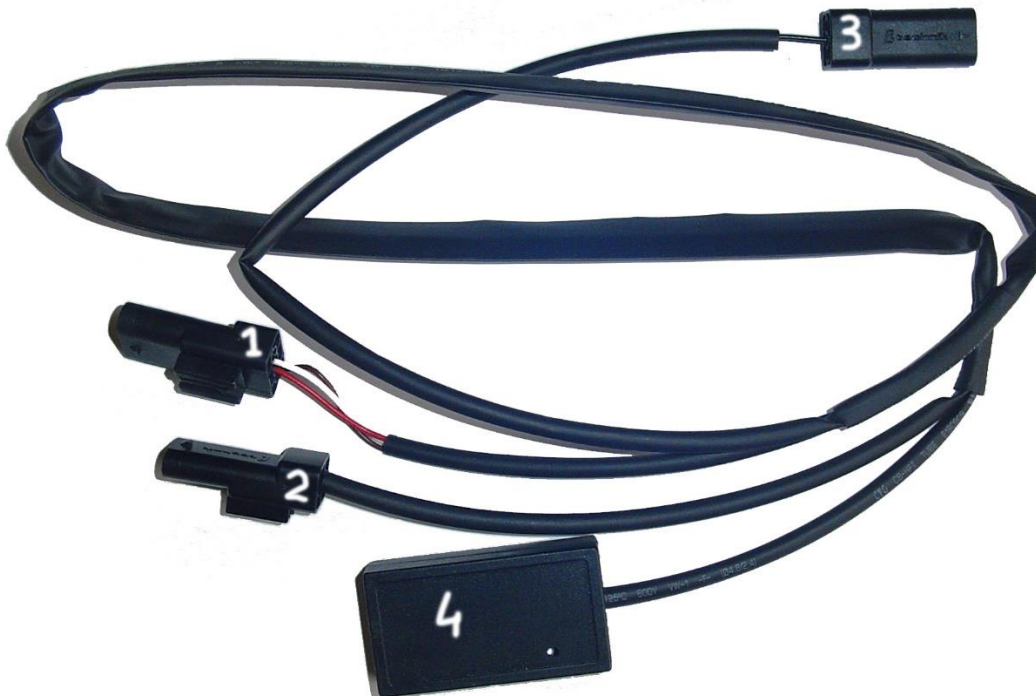
1.2. System weaknesses

- 1.2.1. Unknown.

2. The product installation:

- 2.1. Find a suitable location for mounting testing device. The location must be dry, with a minimum of vibration, the normal temperature range ($<40^{\circ}\text{C}$). The best place for installation close to the motor control unit, in the control unit box.

Testing device general view



Testing device connection

All work is carried out when ignition is switched off.

1 step

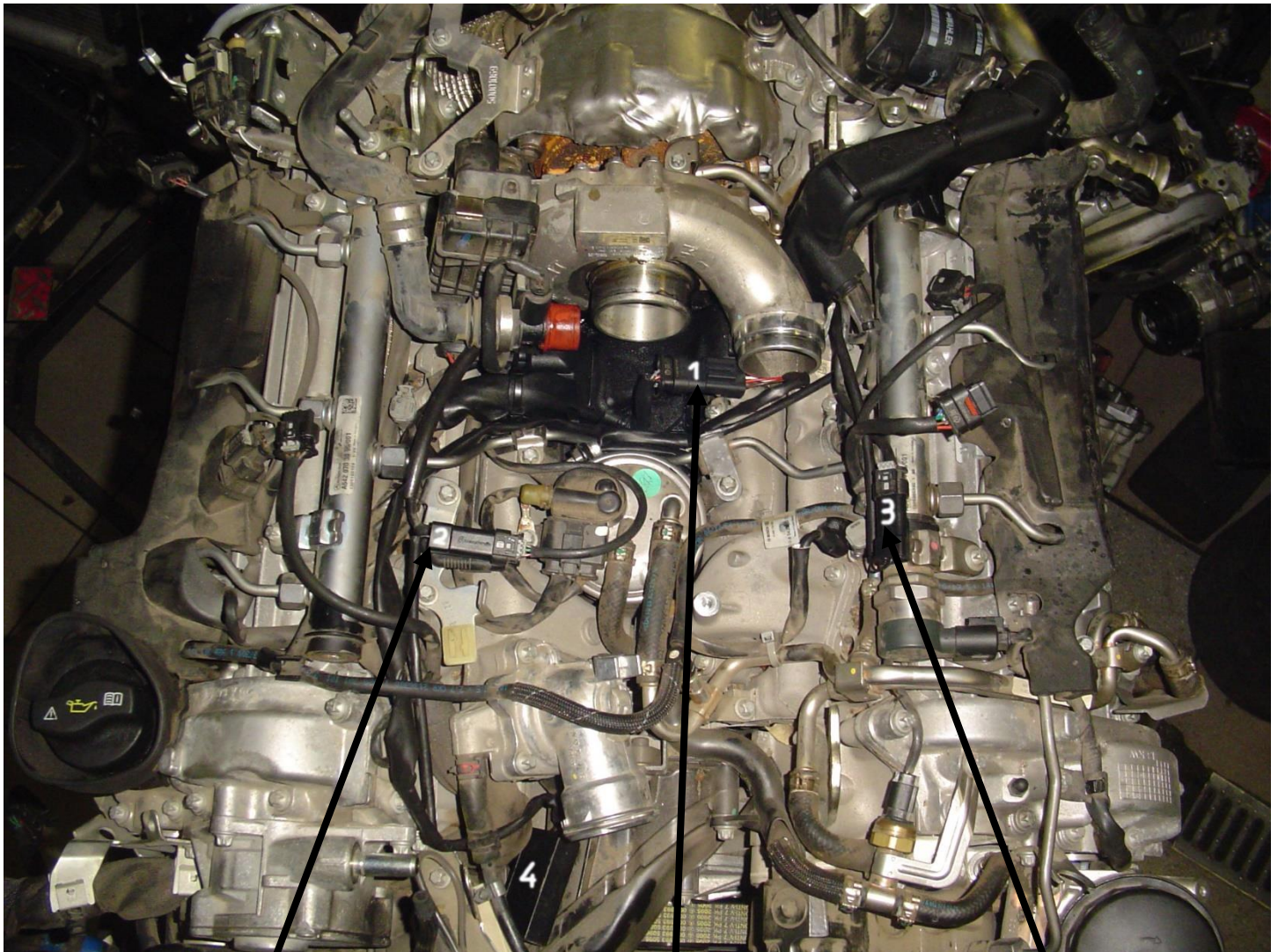
Make sure that the ignition is switched off.

We open hood and remove the top engine protection. Then take off the air intake ducts and air duct that runs from the turbine toward the intercooler.

Make sure is installed the air flow sensors or not (2 and 3 connectors). If they are, then everything we do consecutive accordance with this guide.

If they not installed, then skip step 3.

Total motor view from above when hood is opened and the top engine protection is removed.



Right side flap rod sensor connector

Left side flap rod sensor connector

Intake manifold flap control motor connector

2 step.

Take off air intake channel. We are unmounting the intake manifold flap control motor.

Intake manifold flap control motor connector.

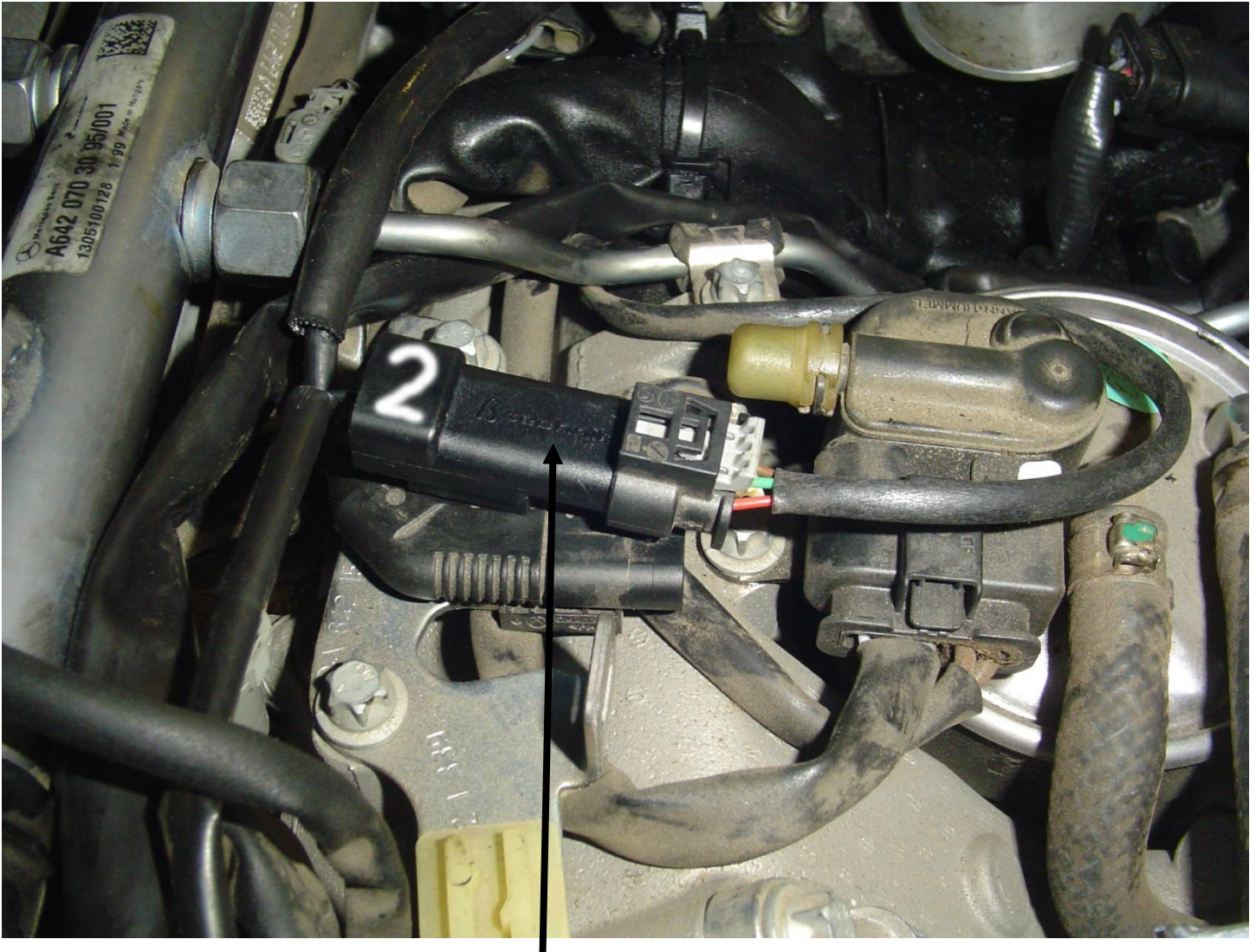


This connector must be disconnected from the control engine of the intake manifold after testing device installation. Instead, this connector connects to the first testing device connection.

3 step

Disconnect the intake manifold valve flap rods sensor connectors.

Left side connector of the flap rod sensor.



This connector must be disconnected from the left side flap rod sensor of the intake manifold valves after testing device installation. Instead, this connector connects to the second testing device connector. Its left side of the flap rod sensor remains disconnected.

Right side flap rod sensor connector



This connector must be disconnected from the right side flap rod sensor of the intake manifold valves after testing device installation. Instead, this connector connects to the third testing device connector. Itsself right side of the flap rod sensor remains disconnected.

4 step

Remove fuel filter, in order to check in which position is an inlet manifold valve

Intake manifold flap control motor location. It is visible after removing the black air inlet channel and fuel filter:



Intake manifold flap control motor location in a car engine.

5 step

Place valve to position "full open" and fix it mechanically.

6 step

Mount the testing device connector to the connector in the car. Fix the emulator (4) that it do not hang in the air. Fix loose cables with straps.

7 step

We install air intake channel back.

8 step

Put the top engine protection.

Note. When the testing device is installed, connector the intake manifold valves and two flaps rods connectors must be completely disconnected from the engine computer. Otherwise, the engine control computer can display the errors associated with these systems. After the testing device installation we suggest to use diagnostic tool to verify whether the emulator is working properly and there are no errors in the system.

Intake manifold flap control motor.



The testing device has four connecting wires. Connect wires in the following order:

Testing device wires color	Vehicle wiring color	Meaning	Connectors
Brown	Brown	GND	1 connector
Red	Red - black	Power supply +12V	
Green	Grey	Intake manifold valves opening / closing motor signal	
Black	Green - violet and green - pink	Rod sensor signal	2 and 3 connectors

These emulators has a small hole in the casing, which is equipped with LED.

LED meanings:

Red flashing: Intake manifold valve is fully closed or green wire has come into contact with the negative pole (mass) cable and happens a short-circuit.

When did this happen? – The engine was running idle, or green wire has come into contact with the negative pole (mass) cable and happens a short-circuit.

Steady red. Intake manifold valve is partially closed.

When did this happen? The engine works in a partial capacity or idle.

Steady green. Intake manifold valve is open.

When did this happen? The engine works in a partial capacity.

Green flashing. Intake manifold valve is fully open. Or green wire has come into contact with the positive pole (plus) cable and happens a short-circuit.

When did this happen? This usually means that the green wire come in contact with the positive pole (plus) cable and a short-circuit.