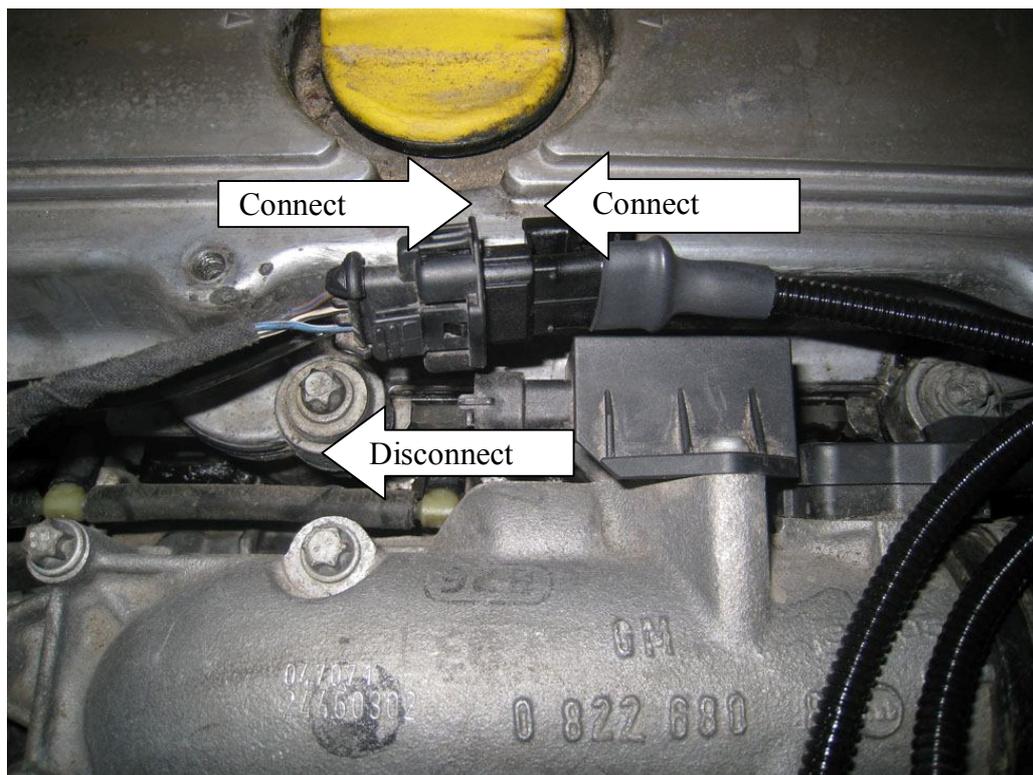Emulator used to replace defective „Elobau" throttle position sensor and resolve dtc.:
P0638 "Throttle actuator control range/ performance B1"

How looks sensor, shown in photos:
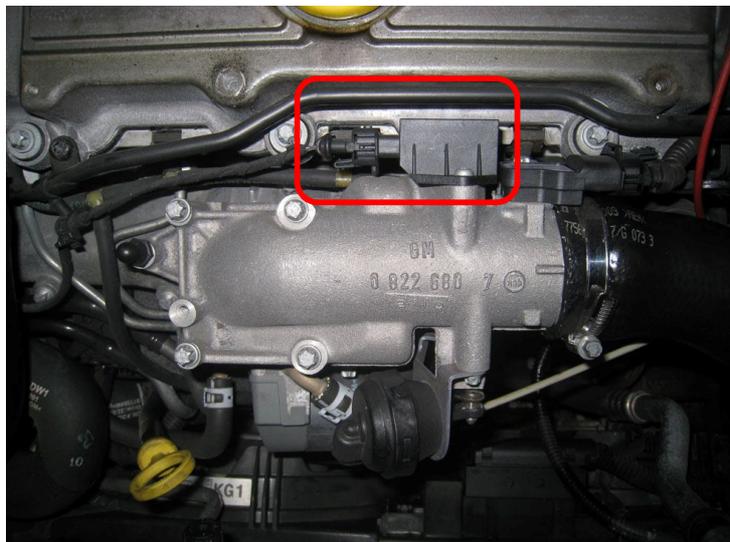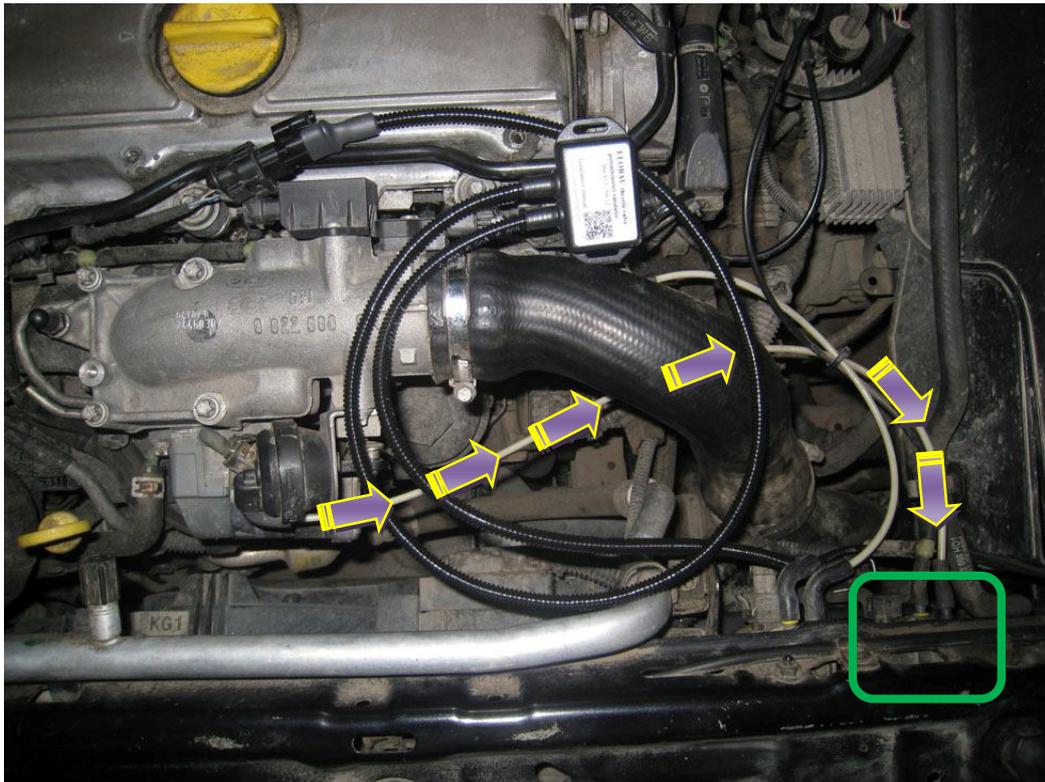

Emulator installation:

1. Disconnect 3 way connector from throttle sensor and connect with 3way emulator connector:
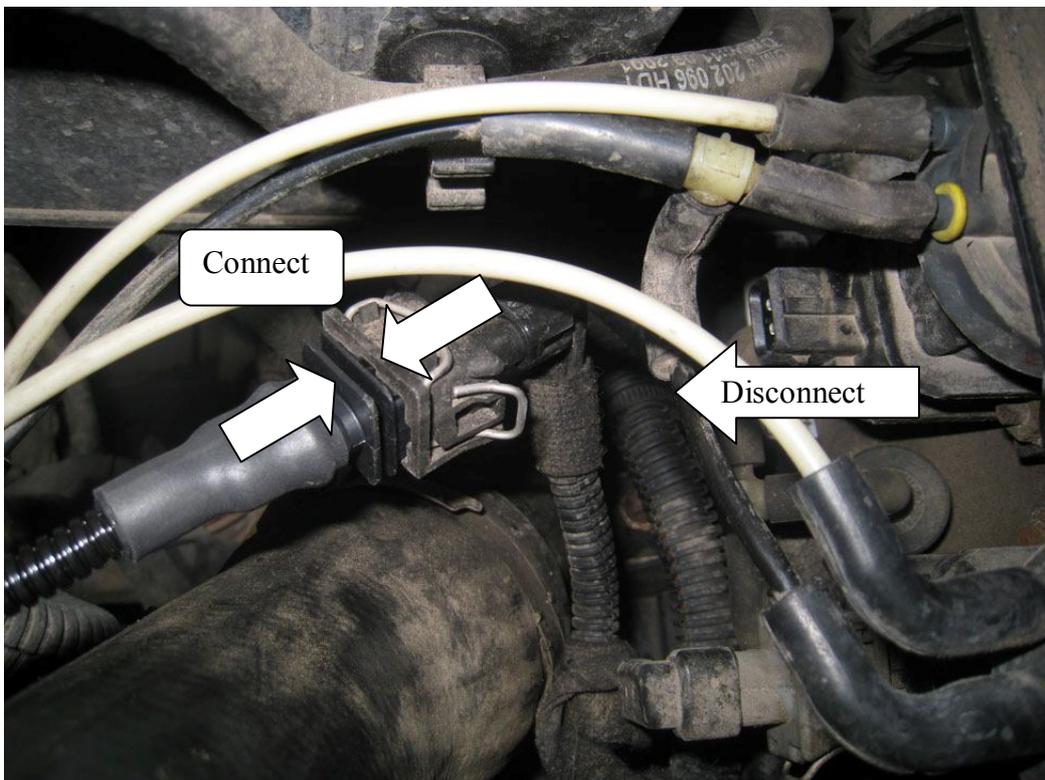
2. Find out where the throttle control vacuum valve (search by vacuum line).

Vacuum line marked with **violet arrows**, location of control valve marked with **green.**

3. Disconnect 2 way connector from valve and connect to emulator 2 way connector:

4. Finally disconnect vacuum line from the valve and seal it with steel pellet. After sealing connect vacuum line back to valve.

Steel pellet inside the rubber vacuum pipe

5. After installation clear the dtc with diagnostic equipment and check throttle sensor voltage in measuring blocks. It must be:
   a. **Ignition on, engine off – sensor voltage 0.9-1.1v**
   b. **Engine in idle state – voltage 0.9-4.5v, mostly about 2.5v**

   [!] If voltage less then 0.9v or more then 4.5v – check wiring, connections or replace emulator.