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TUV Certificate ISO 9001:2000



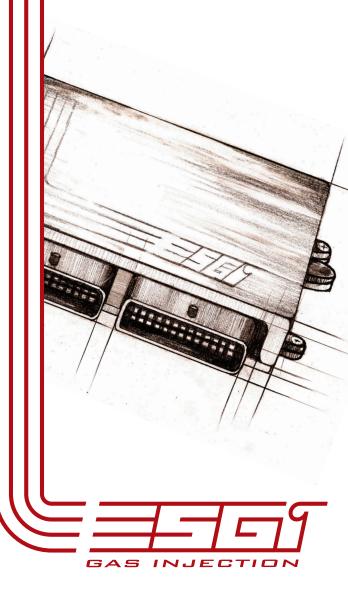
UL. GRAFITOWA 2 55-010 RADWANICE TEL. + 48 (0) 71 311 73 97 FAX + 48 (0) 71 311 73 97 MOBILE + 48 509 610 948 + 48 501 324 400 E-MAIL: INFO@ESGI.PL E-MAIL: INFO@AUTOGAS.PL WWW.ESGI.PL WWW.AUTOGAS.PL



Development and manufacturing of control - and gas - systems for automotive

DISTRIBUTION

SEQUENTIAL GAS INJECTION

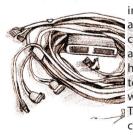




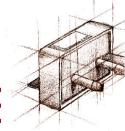


The ESGI sequential gas injection system complies with the strict EURO-4 exhaust emission standard and is fully compatible with EOBD. A unique algorithm controls the gas injectors by processing the signals received from the engine's ECU, which makes fuel map programming much easier. Users of ESGI only need to set the basic engine parameters and run a short adaptation test. Regardless of the engine type it takes only a few minutes to program the whole system. You simply check if the system works correctly and, if necessary, make a few minimal adjuments. A great advantage of the ESGI system is its full compatibility with the available reducers and gas injectors. The universal nature of the controller and software allows you to install the ESGI system in almost every vehicle, no matter if the engine uses sequential, semisequential or full-group injection. You can also install any type of multi-valve with a fuel level gauge and adjust the software accordingly.

The control unit reads data from various sensors and controls the various system functions. It controls the gas injection timing based on the petrol injection timing and the engine rpm signals. The aluminum casing of the control unit is hermetically sealed and heat-resistant. It protects the electronic components housed inside it against atmospheric agents and mechanical stress. The casing also protects the control unit against electromagnetic radiation emitted by electrical elements of the engine or by other sources (transmitters, relays, cellular phones, etc.). If any of the sensors are disconnected or damaged the control unit displays corresponding error codes in the software application. Signals are transmitted through wires bundled in a single airtight FCI harness.

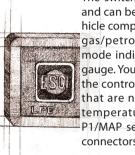


The wires of ESGI system are arranged into one bundle of power cables, cables for controlling electrovalves and injectors, and signal cables for sensors and the switch. The bundle of cables is connected to the gas control unit via an airtight FCI wire harness. All cables have appropriate plugs for gas injectors, temperature sensor and P1/MAP sensor, which simplifies the wiring procedure. To prevent wiring errors the cables are color-coded as indicated in the diagram.

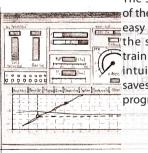


An integrated pressure sensor measures gas pressure and negative pressure in the MAP suction manifold. Based on the gas and MAP pressure readings, which are the engine load reference, the main unit calculates the best LPG amount for optimal driving quality and fuel consumption.

Owing to its small dimensions the integrated LPG gas filter is very easy to install. It is equipped with high quality filter cartridge manufactured using state-ofthe-art filtering materials. It is recommended to replace the cartridge every 10.000-15.000 km.



The switch unit has an aesthetic appeal and can be easily installed inside the vehicle compartment. It acts as a 2-position gas/petrol selector switch with a gas mode indicator and incorporates a fuel gauge. You will find the switch unit inside the control kit bag with all the elements that are needed to install the system: temperature sensor, reducer, buzzer, P1/MAP sensor adapter and bands and connectors.



The simple and user-friendly interface of the ESGI software application makes it easy to set the parameters and program the system by users with only basic training in gas systems. The logical and intuitive character of the application saves time and eliminates errors, making programming easy and comfortable.

GAS INJECTION