

ALEX DIESEL

**Alternative dual fuel system
for diesel engines, using
LPG or CNG fuel.**



The ALEX DIESEL system is based on the mixing of 2 fuels: diesel oil and gas. The controller limits the injection of diesel oil to the amount that allows self-ignition in the cylinder, and in its place gives a precise dose of gas. **The share of gas in the ALEX DIESEL installation is on average up to 30% LPG or 50% CNG.** Such proportions of additional fuel guarantee the correct operating conditions of the engine and the entire system.

Adding gas, which acts as a catalyst to the fuel mixture, **allows the diesel to burn more efficiently**, which is practically impossible in an ordinary diesel engine. Diesel engines burn most of the injected diesel fuel, but there is always some part that turns into exhaust gas (containing, among others: hydrocarbons, carbon monoxide, nitrogen oxide and carcinogenic solid particles). **In the ALEX DIESEL system, thanks to the improved combustion efficiency of a mixture of gas and diesel fuel, the emission of CO₂, solid particles and nitrogen oxides is much lower.**

Installation of the ALEX DIESEL system increases the torque and engine power. The temperature and emission of exhaust gases do not exceed the ranges established for the base fuel supply - diesel fuel. **Thanks to this, the system does not adversely affect the engine's service life and generates economic and ecological benefits.**

ADVANTAGES OF THE ALEX DIESEL CONTROLLER

- **The small dimensions of the housing** facilitate installation in tight engine compartments
- Support for **up to 4 gas injectors**
- **Injection system upstream of the turbocharger**, regardless of the number of cylinders
- **Advanced gas fuel dosing algorithm**
- **Built-in protection** to detect knocking combustion
- **Advanced "Cut-off" options** that cut off gas injection
- **Built-in emulators** of analog (3 channels) and digital (2 channels) signals
- Possibility of **cooperation with** vehicles equipped with **cruise control**
- **Exhaust gas temperature control**
- Possibility of **tuning with a broadband lambda probe** (external controller required)
- **Clear configuration software**



TECHNICAL SPECIFICATION OF THE SYSTEM

ALEX DIESEL

Number of supported gas injectors	up to 4
Connector - number of pins	48
Housing type	ALUMINIUM
Additional adjustments to the cruise control	✓
Additional corrections to the exhaust gas temperature	✓
Additional corrections of the reducer temperature	✓
Additional corrections of the collector pressure	✓
Additional gas pressure corrections	✓
Additional differential pressure corrections	✓
Additional adjustments to the pressure of the saddle	✓
Additional outside temperature corrections	✓
Extensive oscilloscope to observe the operating parameters of the installation	✓
Compatibility with all types of compression ignition engines	✓
Cooperation with many types of gas level sensors	✓
Full short circuit and overload protection	✓
LPG and CNG fuel support	✓
Possibility to emulate up to 3 analog signals	✓
Possibility to emulate up to 2 digital signals	✓
Support for up to 2 knock sensors	✓
Three-dimensional gas and diesel dosing maps	✓
Advanced Cut off functions	✓
The function of detecting leaks in installations, including injectors	✓
Possibility of integration with the FMS system	✓
Gas consumption monitoring	✓
Detection of transition to cruise control mode	✓
Possibility to connect an external AFR controller	✓
Extensive emulation functions (3 analog channels and 2 digital channels)	✓
Homologations	E8 10 11779 00, E8 67 11777 00, E8 110 11778 00

BASIC COMPONENTS OF ALEX DIESEL SET

- ALEX DIESEL controller
- Main electrical harness
- Electric harness for emulators
- Pressure and temperature sensor ALEX PTS-02
- Exhaust gas temperature sensor
- Reducer temperature sensor
- Outdoor temperature sensor
- Knock sensor (1 pc, 2 pcs or no)
- RGB switch



Additional elements

- Gas injectors
- Reducer with a temperature sensor
- Manometer
- Converter 12/24V
- Gas filter
- Refueling valve + accessories (mounting, plug)
- Pipes (rigid, gas, water)
- CNG stickers, bands, etc.



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