

EcoNrg

Dual Fuel Systems India Pvt. Ltd





Switch to
alternative fuel

STAG DIESEL



Save up to 50%
on fuel costs



Taking care
of the enviroment

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About Our Diesel Dual Fuel System

- This is an alternative fuelling system for 2-16 cylinder Diesel engines.
- The whole system has been based on modern technical solutions that allow the mixture of gas and air which later is mixed with Diesel in the cylinder.
- Installation of the Econrg Dual Fuel System does not prevent using Genset only on Piped Natural Gas, as our solution does not require interference with internal engine parts.
- The controller is able to manage intelligently the dosing of both fuels to an engine while it is running, thanks to the readings of sensors: exhaust temperature probe, knock sensor or oxygen sensor (lambda probe).





Ability of LPG/CNG Controller

- Unlike traditional Gas Train, operation with Diesel engines up to 8 cylinders in a sequential mode
- Operation with Diesel engines up to 16 cylinders in a full group mode
- Measurement and control of the amount of injected Diesel in Genset with common rail engines.
- Extended algorithm for engine protection
- Controlled exhaust gas temperature for improved safety of the engine
- Use of the readings of a wide-band oxygen sensor, control of air-to-fuel rate with an independent wide-band oxygen sensor dedicated to Diesel engines
- Ability to maintain power after conversion in Diesel Genset with common rail engines,
- Auto-calibration system & modifications of gas injection sequence





Low Pressure Gas Injectors

- Gas Injectors Purpose:
 - Ensure precise injection
 - Electronically controlled for accuracy
- Injector Redesign:
 - Focus on precision in opening and closing times
 - Facilitates Dual Fuel System for KVA Ratings up to 3000 KVA
- Low Pressure Operation:
 - High KVA Ratings: Operate on 300 mbar to 2 bar of PNG Pipeline pressure – Tested till 1.5 MVA
 - Low KVA Ratings: Operate on 100 mbar to 2 bar of PNG Pipeline pressure
- Benefits:
 - Ensures precise fuel injection
 - Enhances system longevity and reliability





Sensors for Engine Safety- Highest Priority

- Knock Sensor: Detects abnormal combustion, ensuring engine safety and stability unlike Vibration sensor.
- Lambda Sensor: Regulates air-fuel ratio for optimal combustion and emission control.
- Exhaust Gas Temperature Sensor: Monitors exhaust temperature, preventing overheating and optimizing efficiency.
- PS 04 Sensor: Regulates intake pressure, improving combustion and engine longevity.

Benefits:

- 1.Enhanced Safety
- 2.Improved Efficiency
- 3.Emission Compliance





Increased Engine Power

- Dual-fuel systems in LPG/CNG/Diesel configuration make it possible to use the energy in Diesel that has not been used before.
- When Dual Fuel installation is properly installed and tuned it is possible to gain a significant increase in power and torque within 10% to 30% in power, while reducing operating costs and improving engine performance.
- Only Achievable with Sequential Injection Technology



**Tested for
compatibility
with:
Power
Generators**



**Naturally
Aspirated**

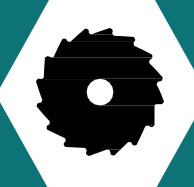


**Mechanically
Controlled**



CRDI Engine

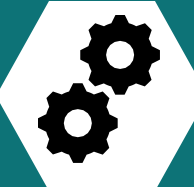
**System can be
installed on:**



10 Kva to 40 Kva



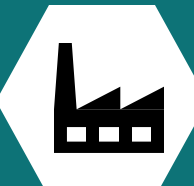
62.5 Kva to 100 Kva



125 Kva to 180 Kva



250 Kva to 500 Kva

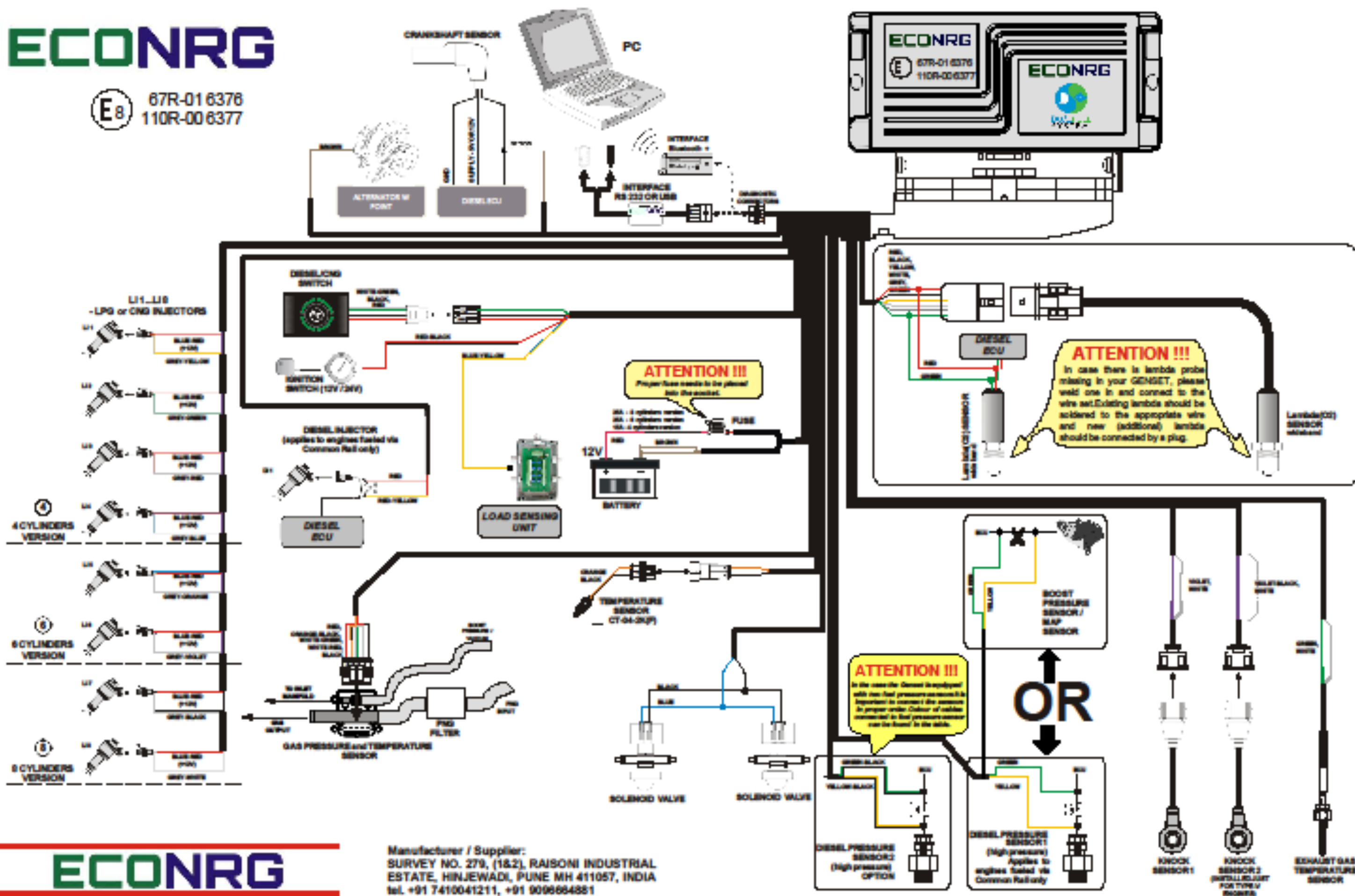


750 Kva to 2 MW

INSTALLATION DIAGRAM

ECONRG

E8 67R-01 6376
110R-00 6377



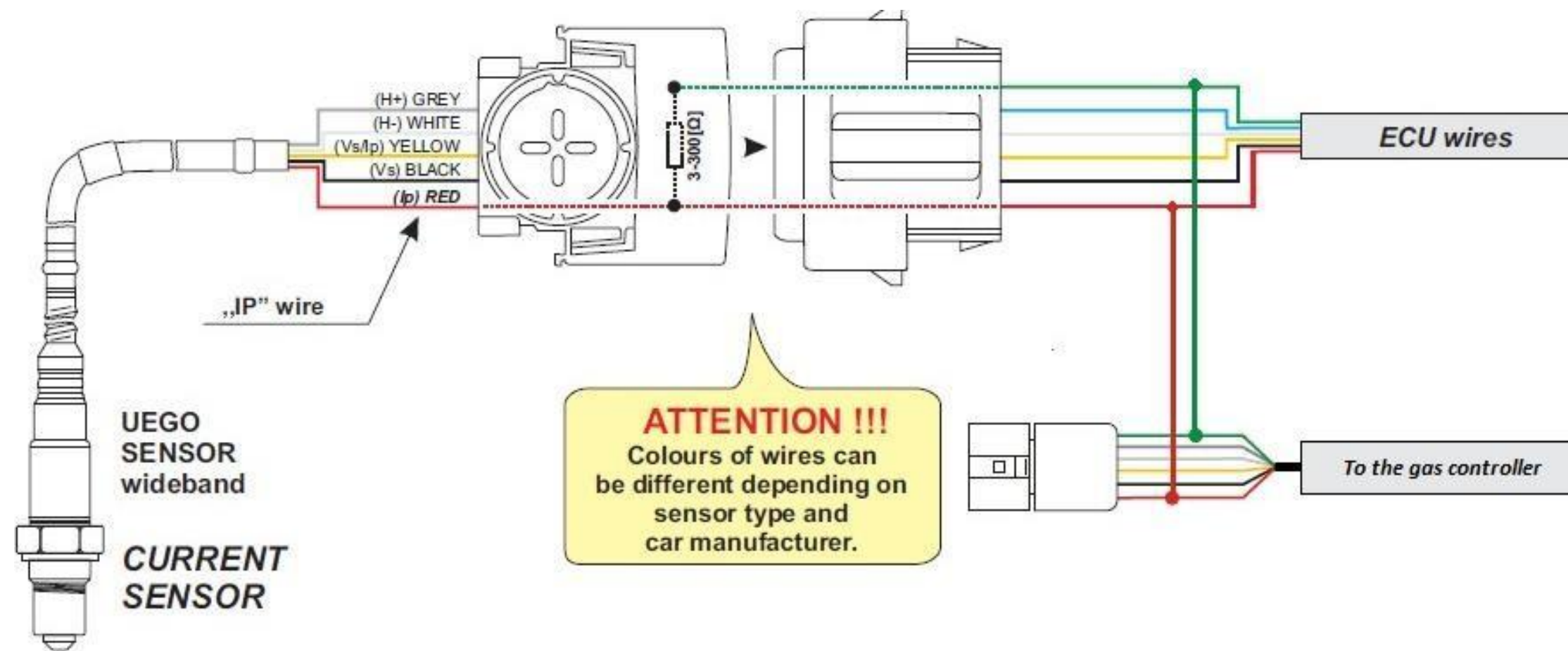
ECONRG

Wiring diagram

Manufacturer / Supplier:
SURVEY NO. 279, (1&2), RAISONI INDUSTRIAL
ESTATE, HINJEWADI, PUNE MH 411057, INDIA
tel. +91 7410041211, +91 9096664881
e-mail: operations@econrg.co.in, sales@econrg.co.in

Connect Oxygen Sensor

Example of BOSCH sensor – LSU 4.9 (part no. 0 258 006 065) connection.

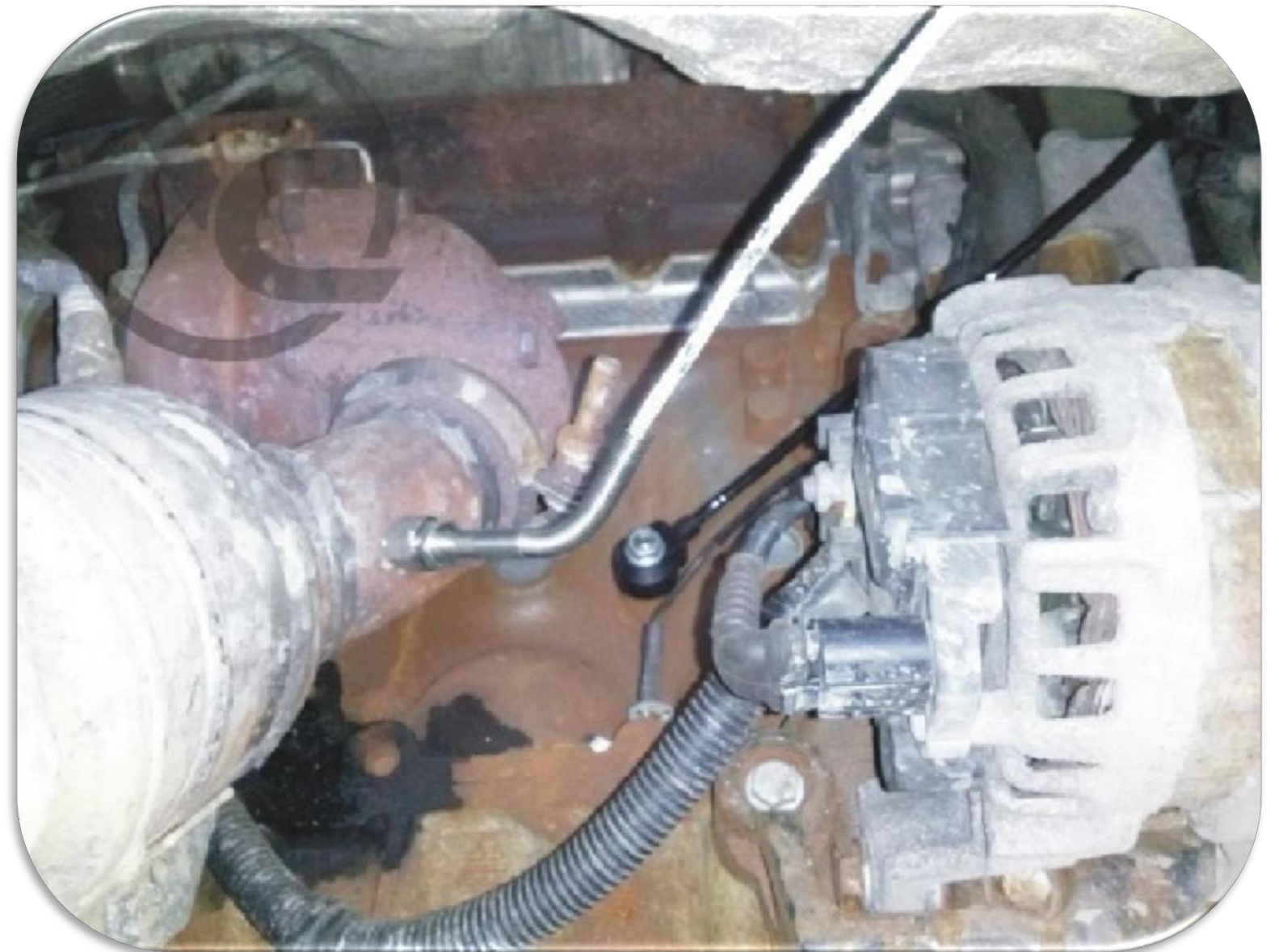
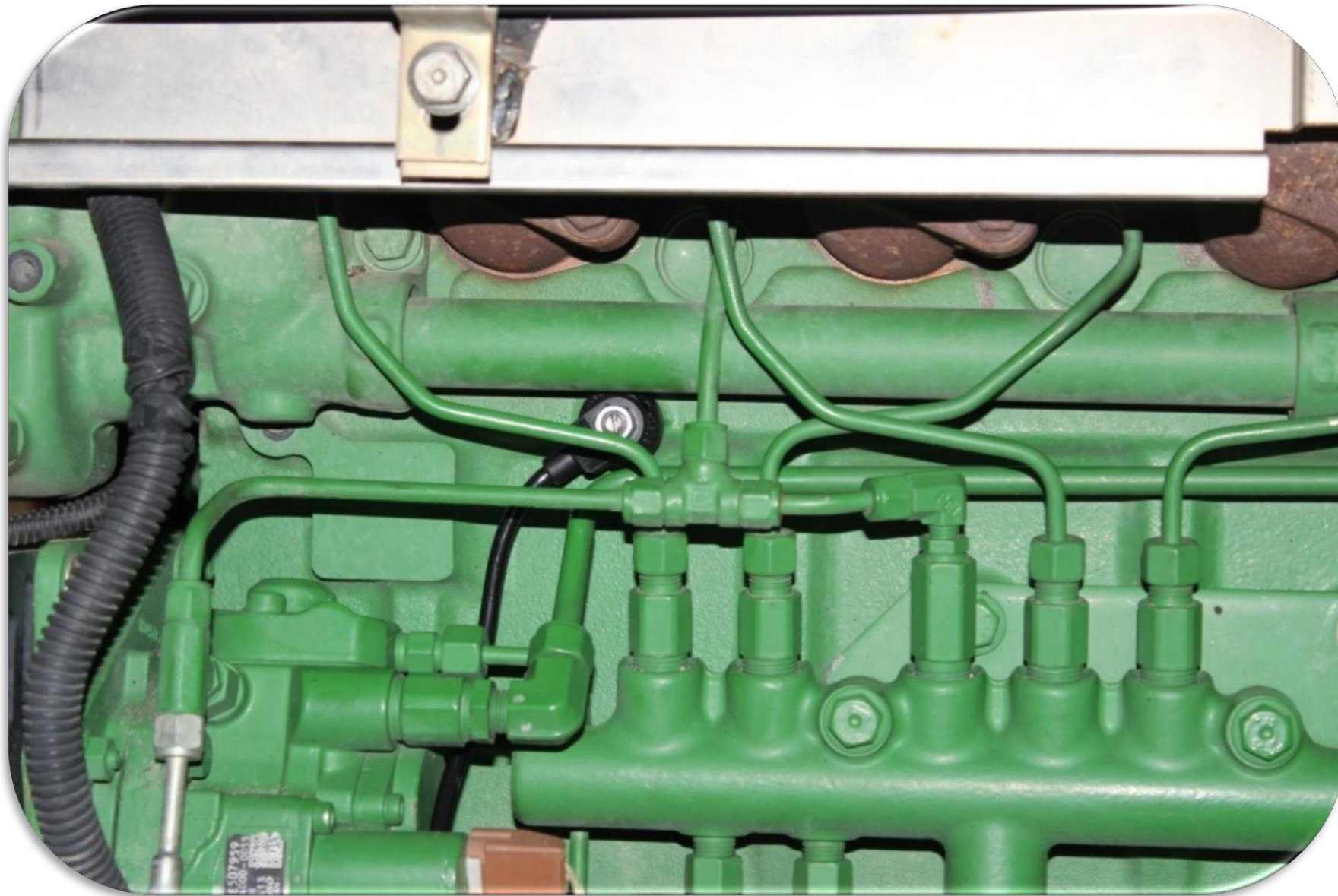


- ✓ In case of factory existing oxygen sensor, we can use it. Connect two wires (red and green) to the factory harness.
- ✓ One of them should be connected to the signal from the sensor, and second wire (green) behind the resistor in a socket.



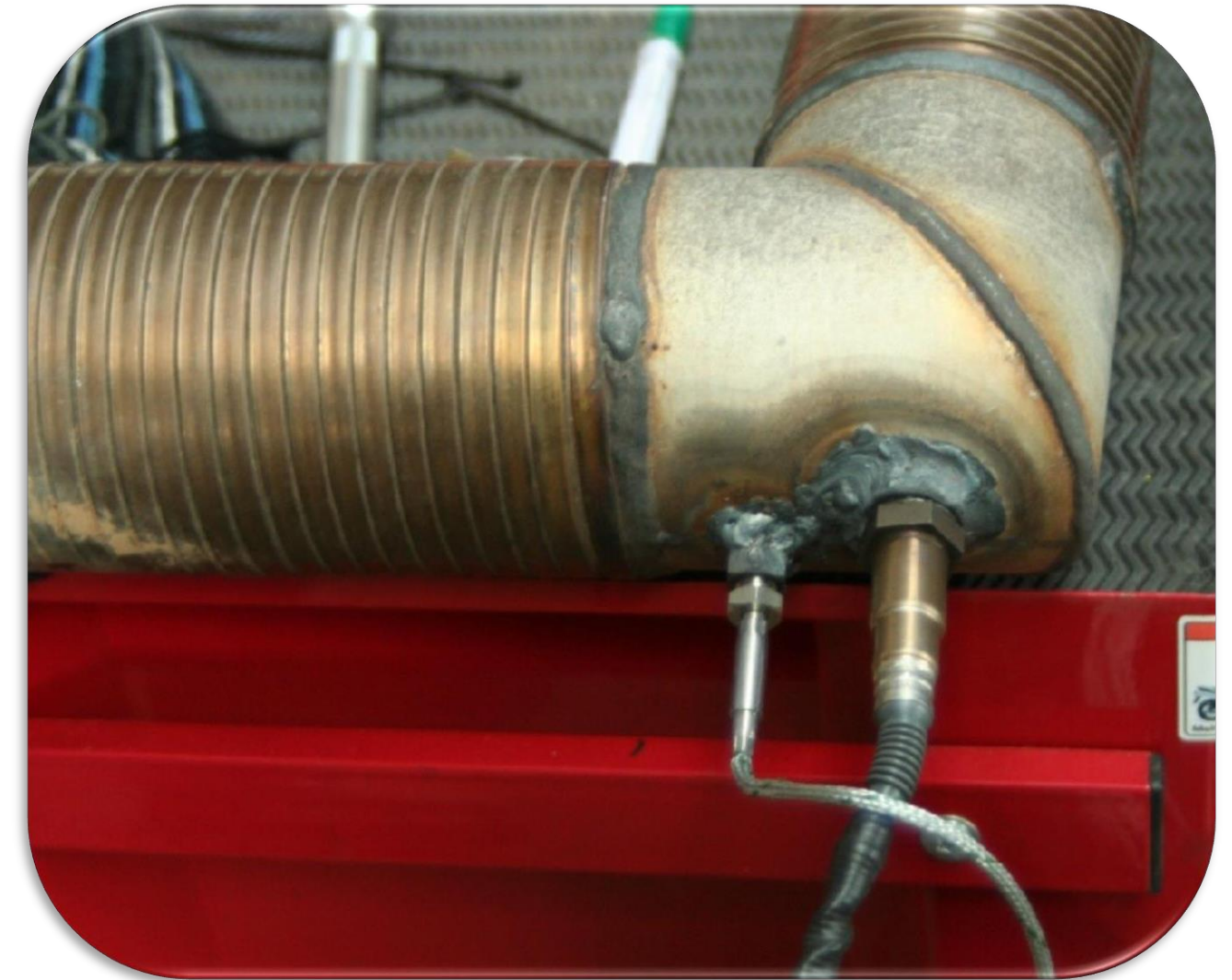
Fitting and connecting knock sensor

Knock sensor should be mounted on the cylinder block. The best place is on the middle cylinder block. Place where the sensor will touch the cylinder block must be clean, without corrosion. And must be attached (with screw) with 20 Nm force.



Oxygen sensor and exhaust gas temperature sensor

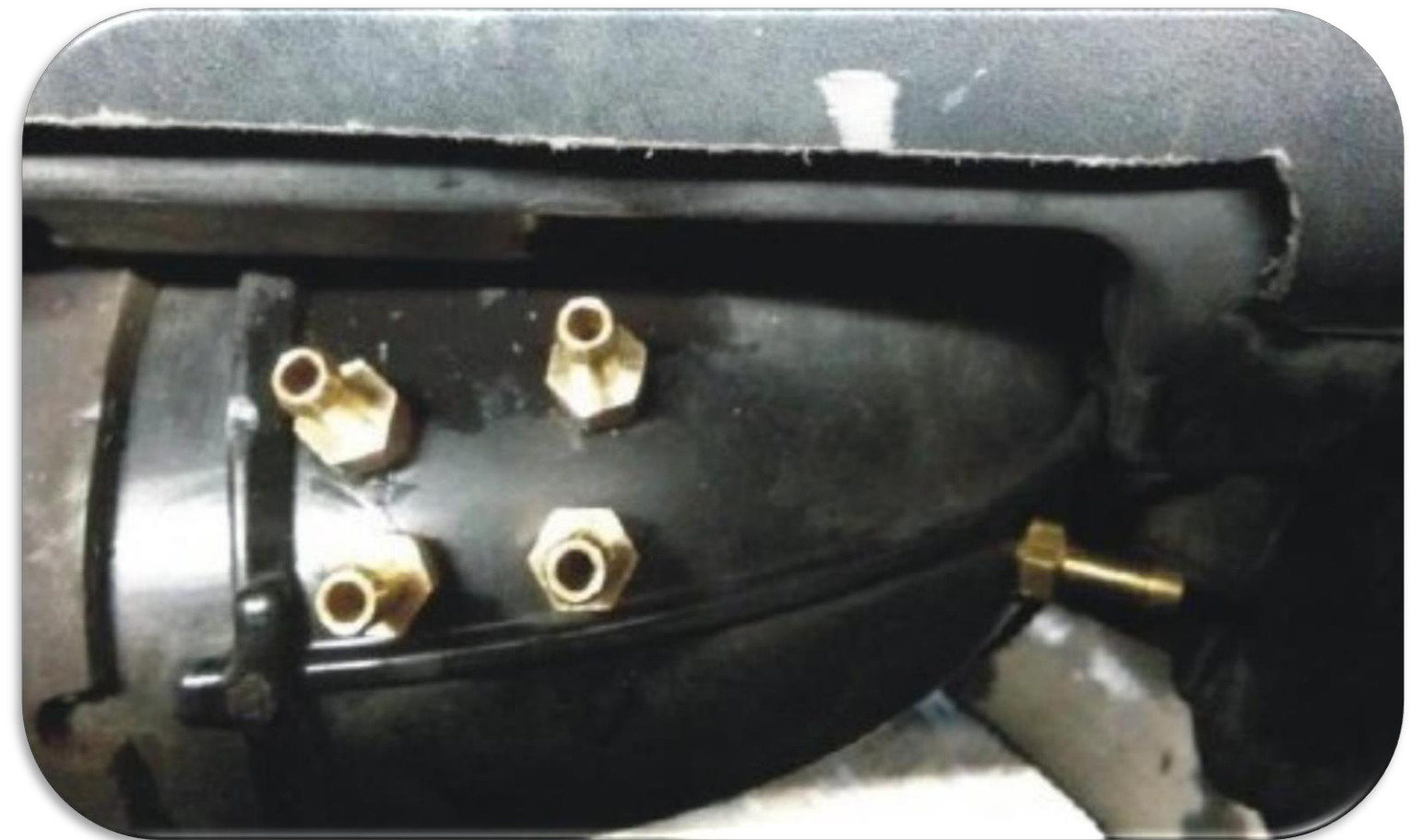
EGT and oxygen sensor should be mounted behind the turbo. If it is possible, before the catalyst.
Do not install EGT and oxygen sensors in the same line as gas flow.



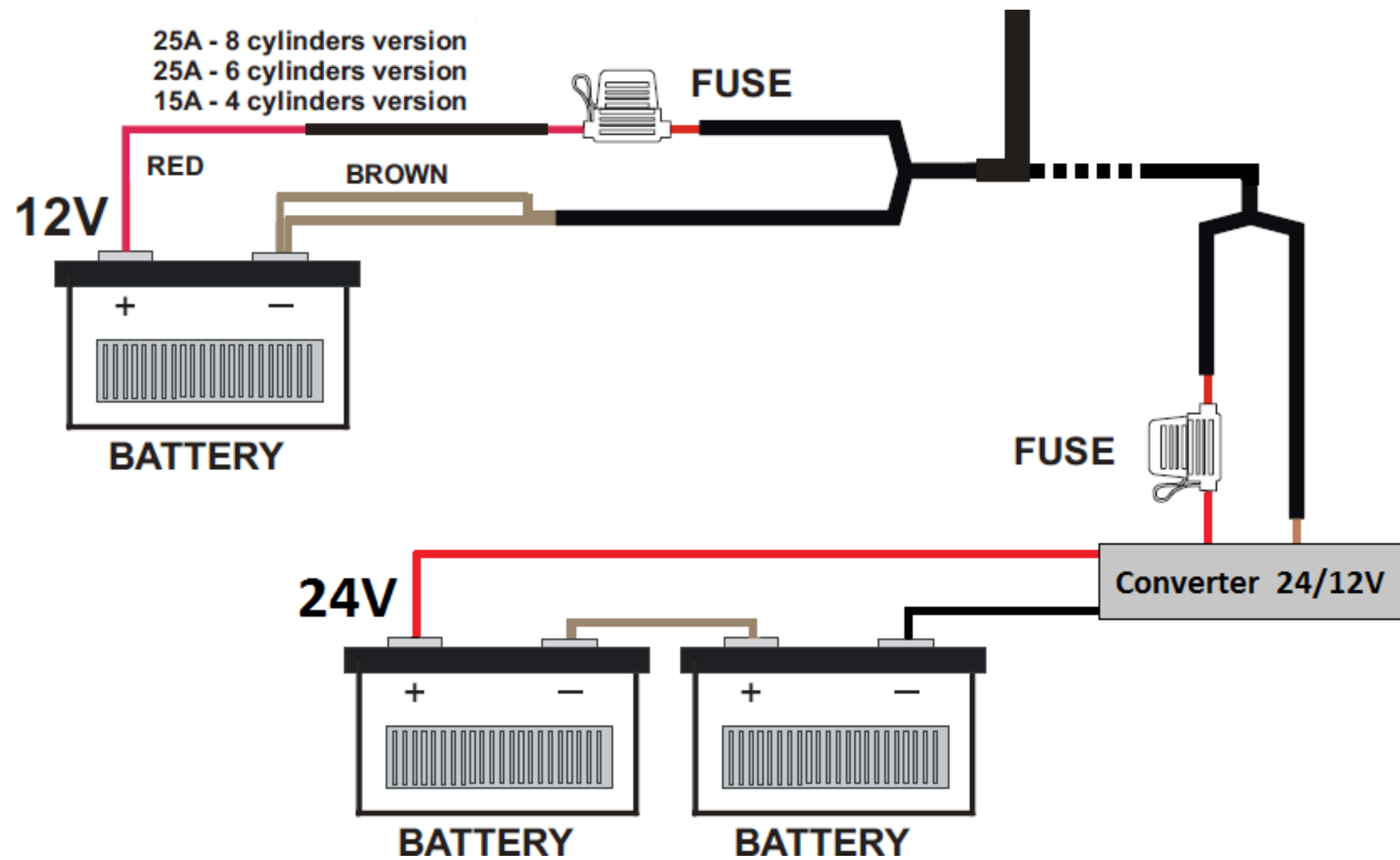
Fitting an injectors and nozzles



- ✓ Nozzles should be mounted in the air tube between the intercooler and manifold suction.
- ✓ The vacuum nozzle should be installed before the gas nozzles.



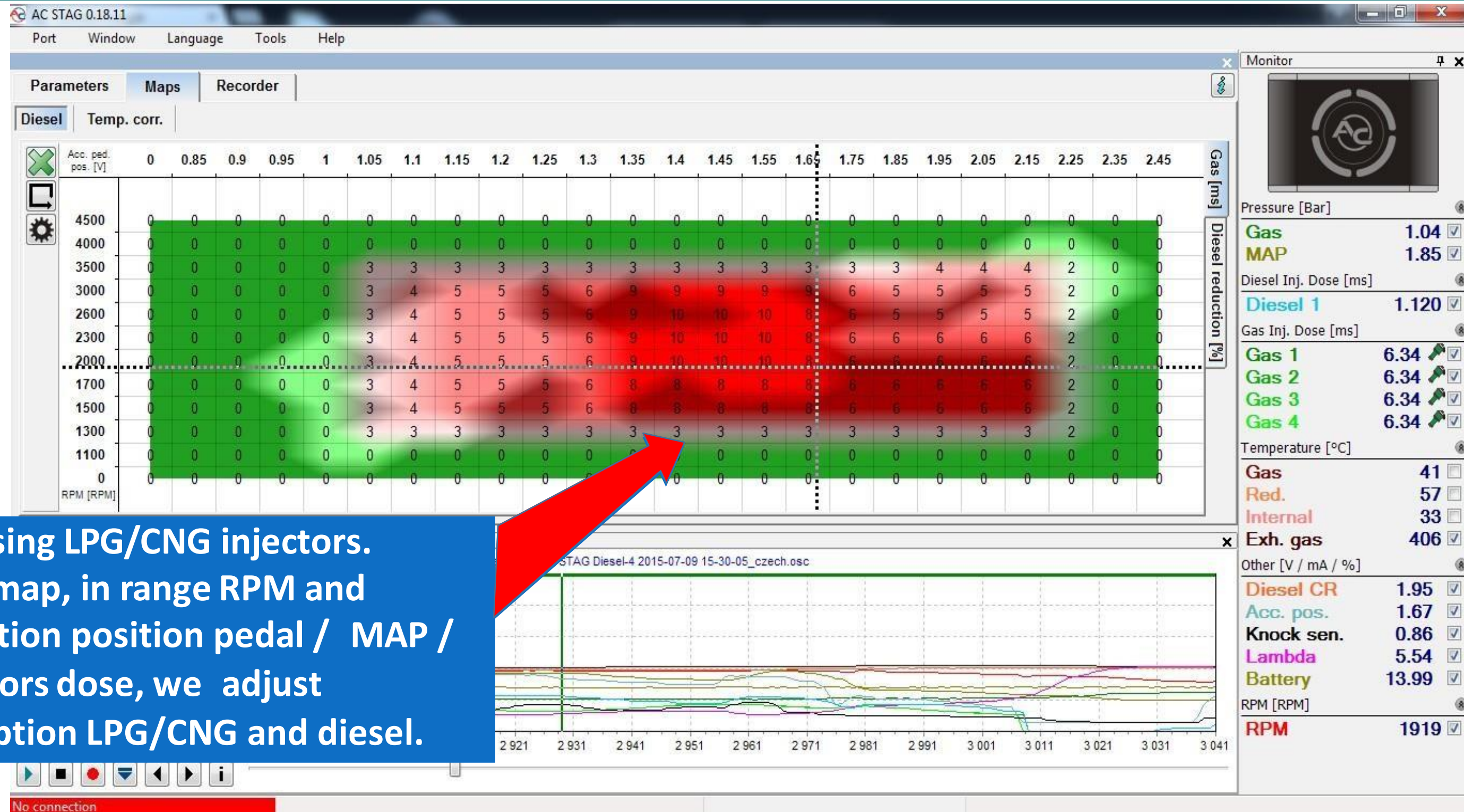
Connect battery / voltage converter 24/12V



- ✓ Heavy trucks and tractors use 24V supply. In this case it is necessary to use a voltage converter 24/12V.
- ✓ Plus from the ignition can be connected directly to 24V.

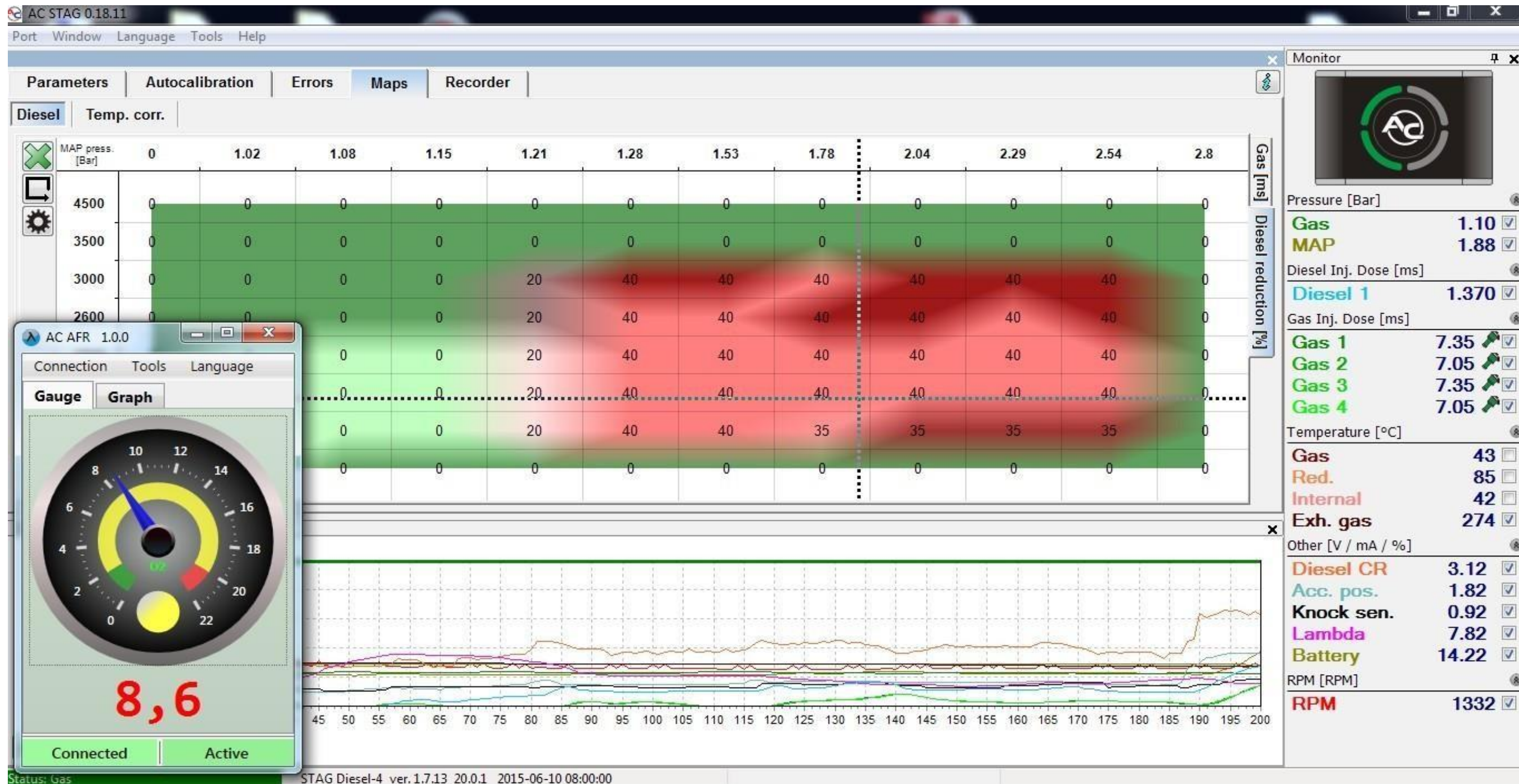


Software and adjusting of the system



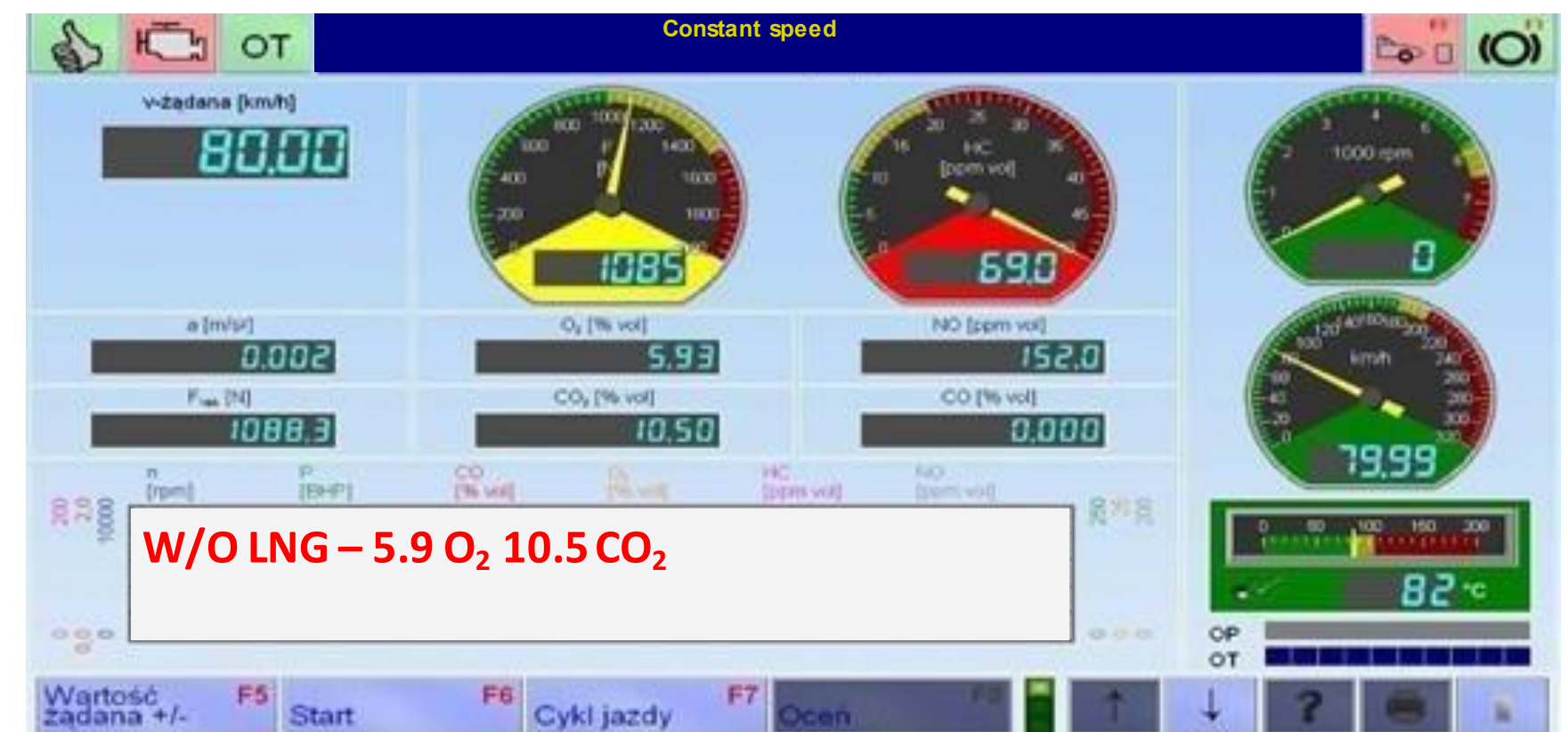
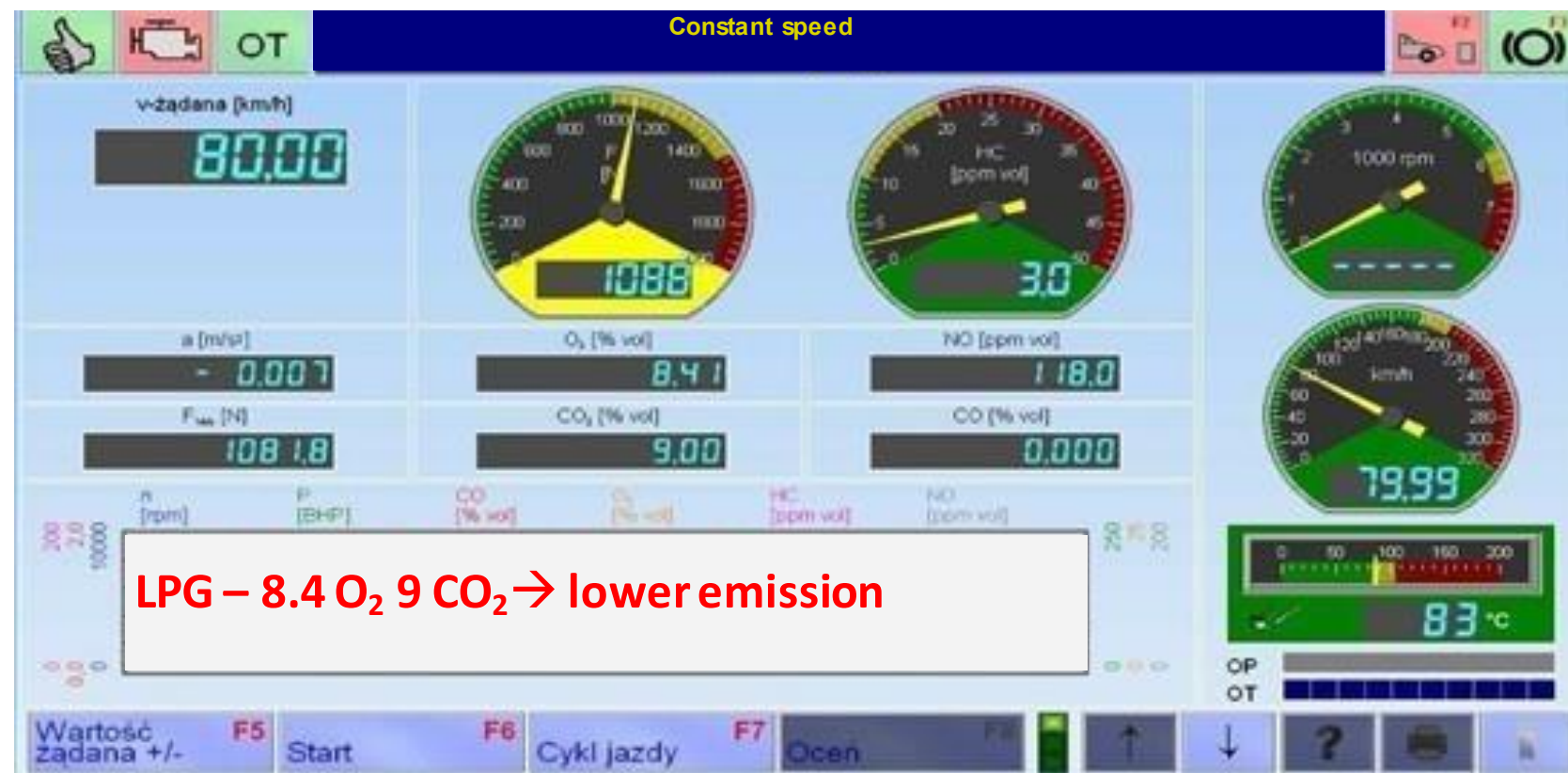
Software and adjusting of the system

Diesel Reduction Map



DIESEL + CNG/LPG/LNG = ECOLOGY

EXHAUST GAS EMISSION MEASUREMENT TESTED IN POLAND



Prospects for EcoNrg

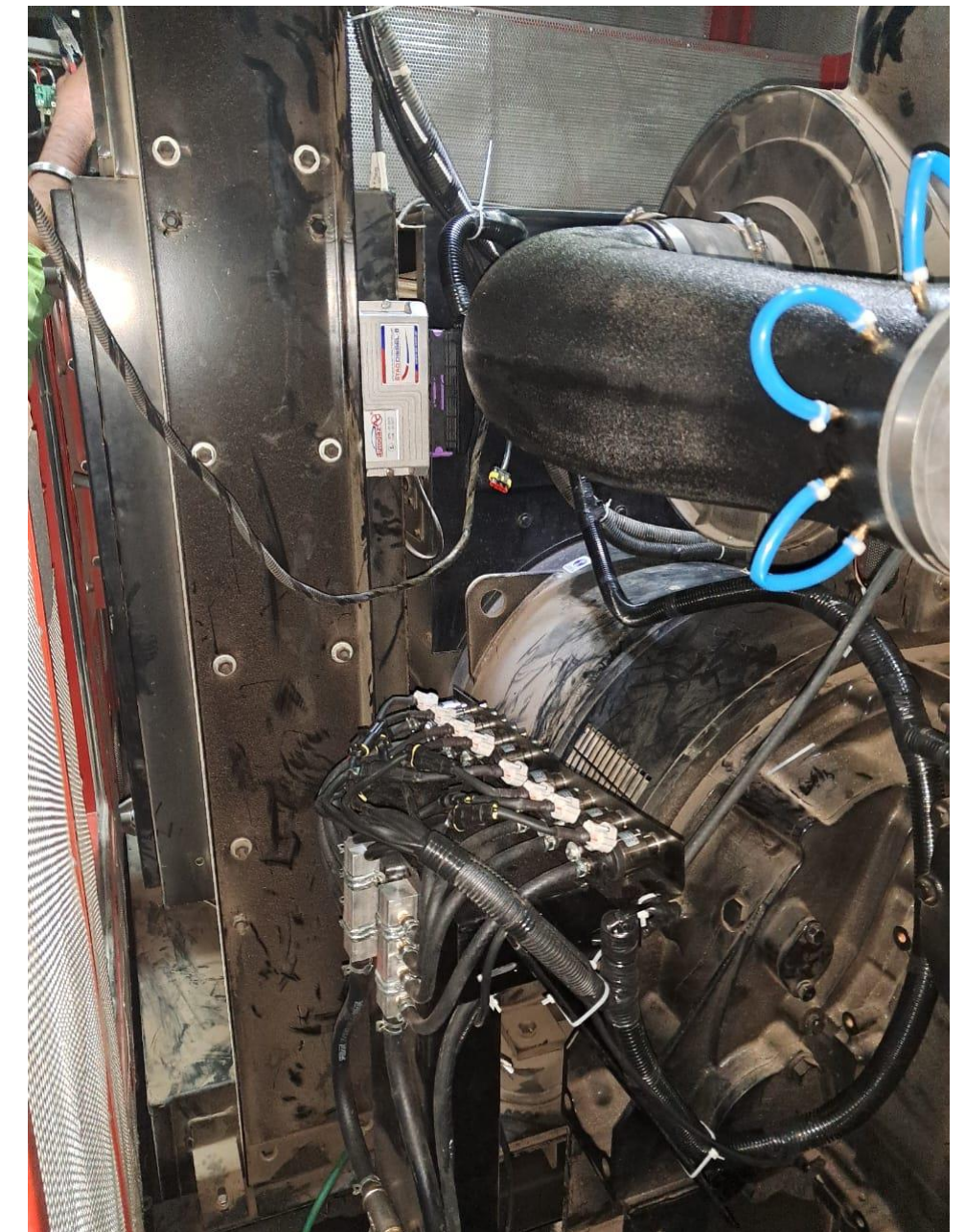
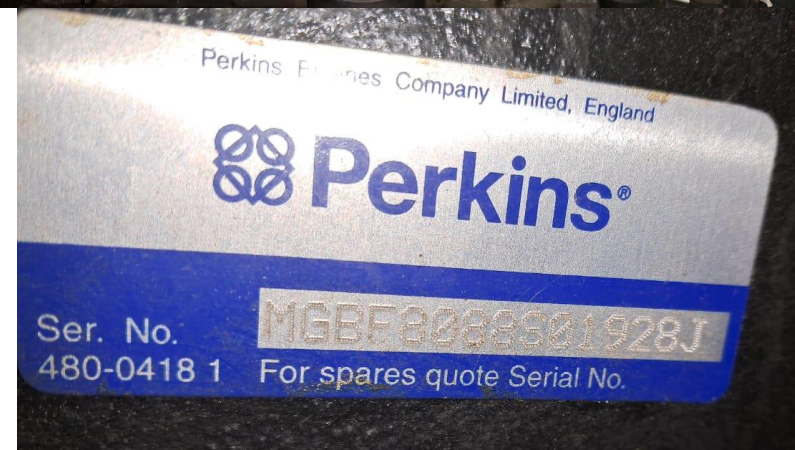
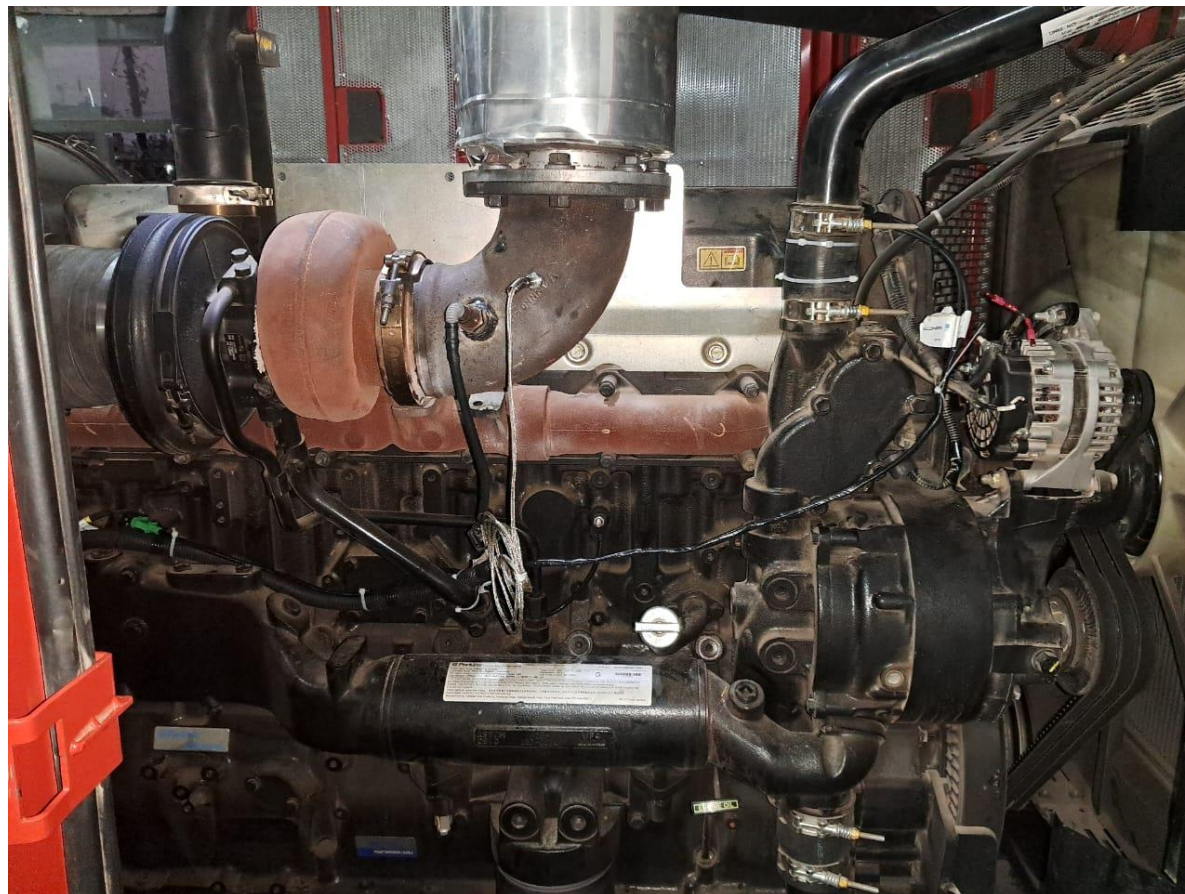
Stag Diesel development

- Firmware modifications
- Developing new controllers
- Diesel engines testing



Mahindra Powerol 500 Kva (Perkins) Diesel Generator Set – OEM SUPPLIES TO MAHINDRA

Diesel Generator running on EcoNrg Dual fuel system..



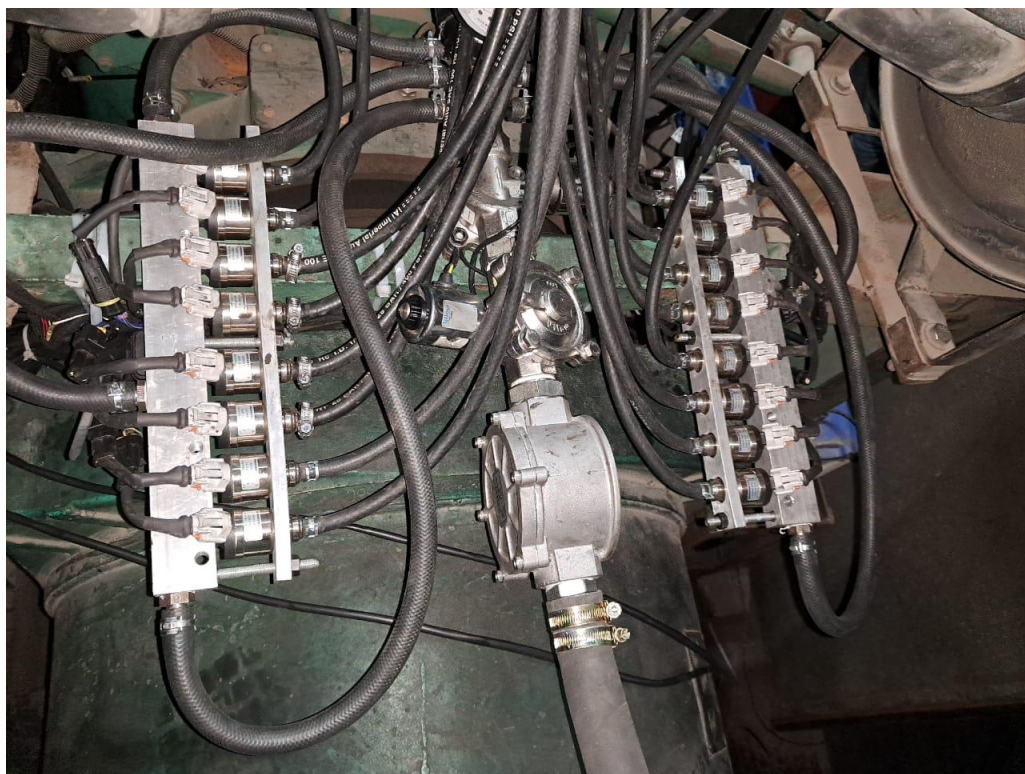
Cummins KT 1150G Open Diesel Generator Set with Genset Rating 380 KVA

Diesel Generator running on EcoNrg Dual fuel system..

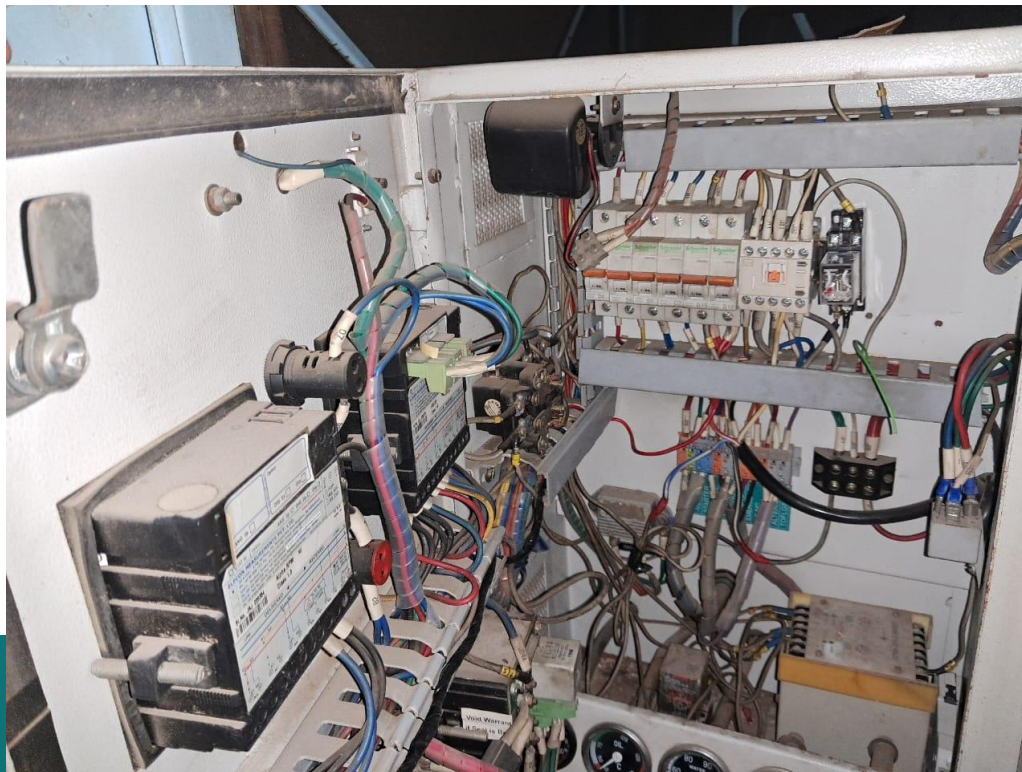
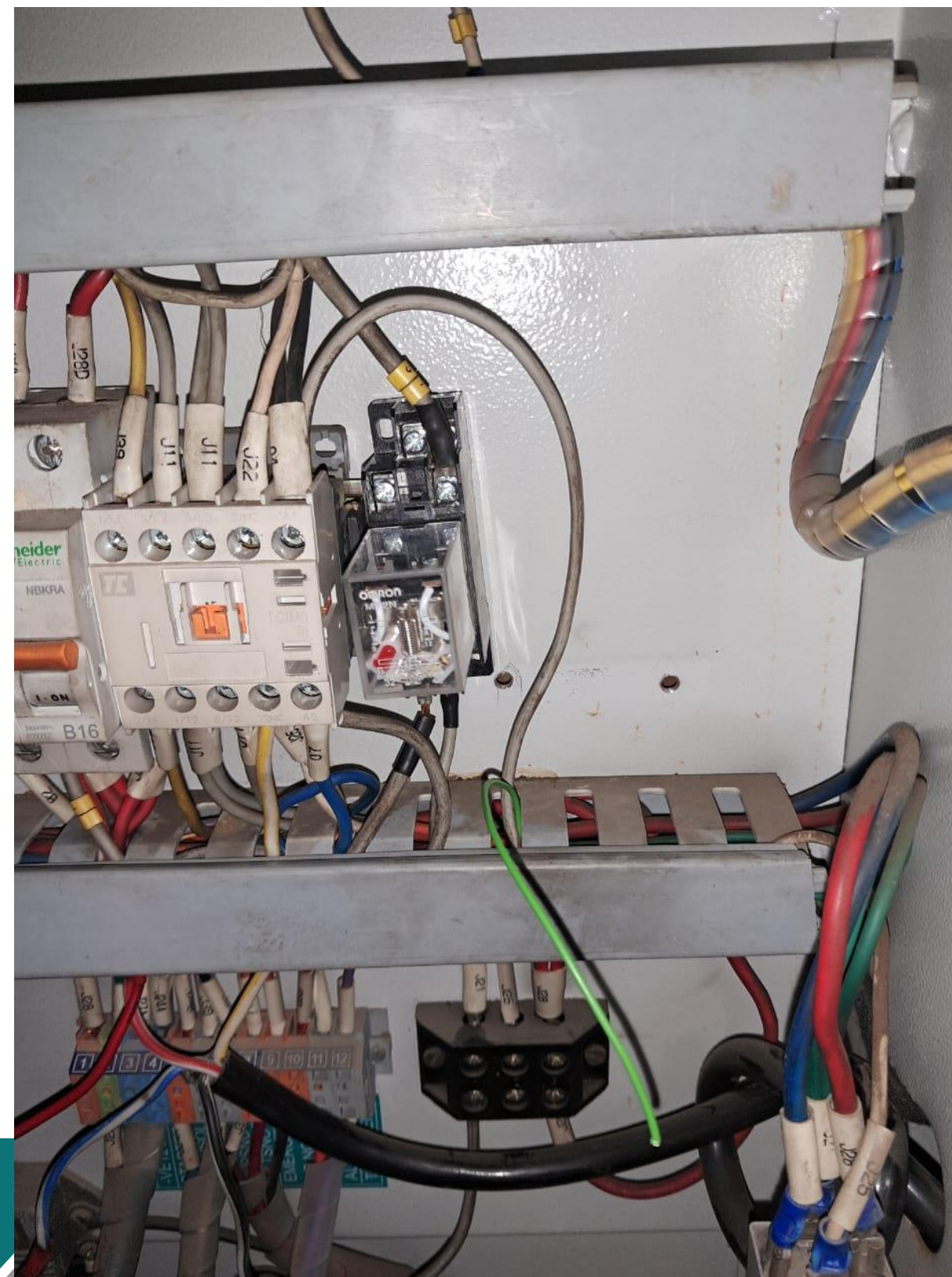


Cummins KTA 38 G5- 1010 KVA – 12 CYLINDER ENGINE

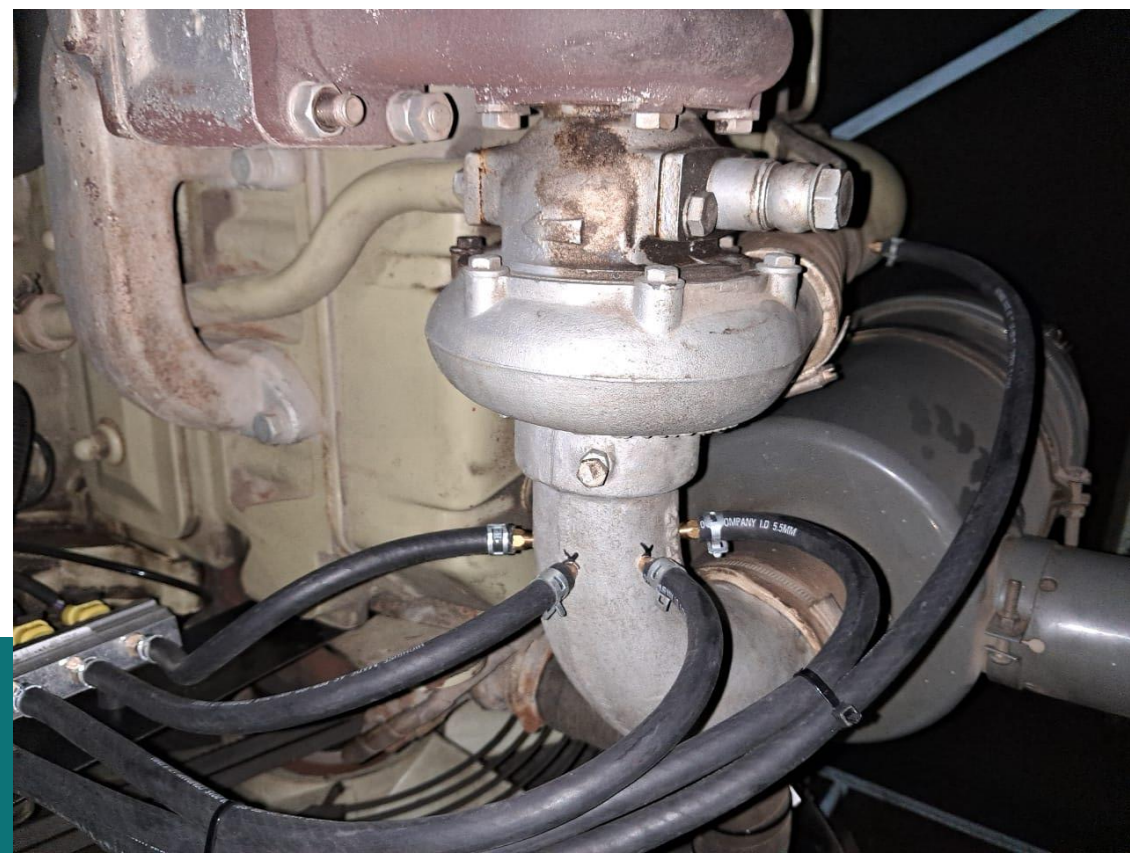
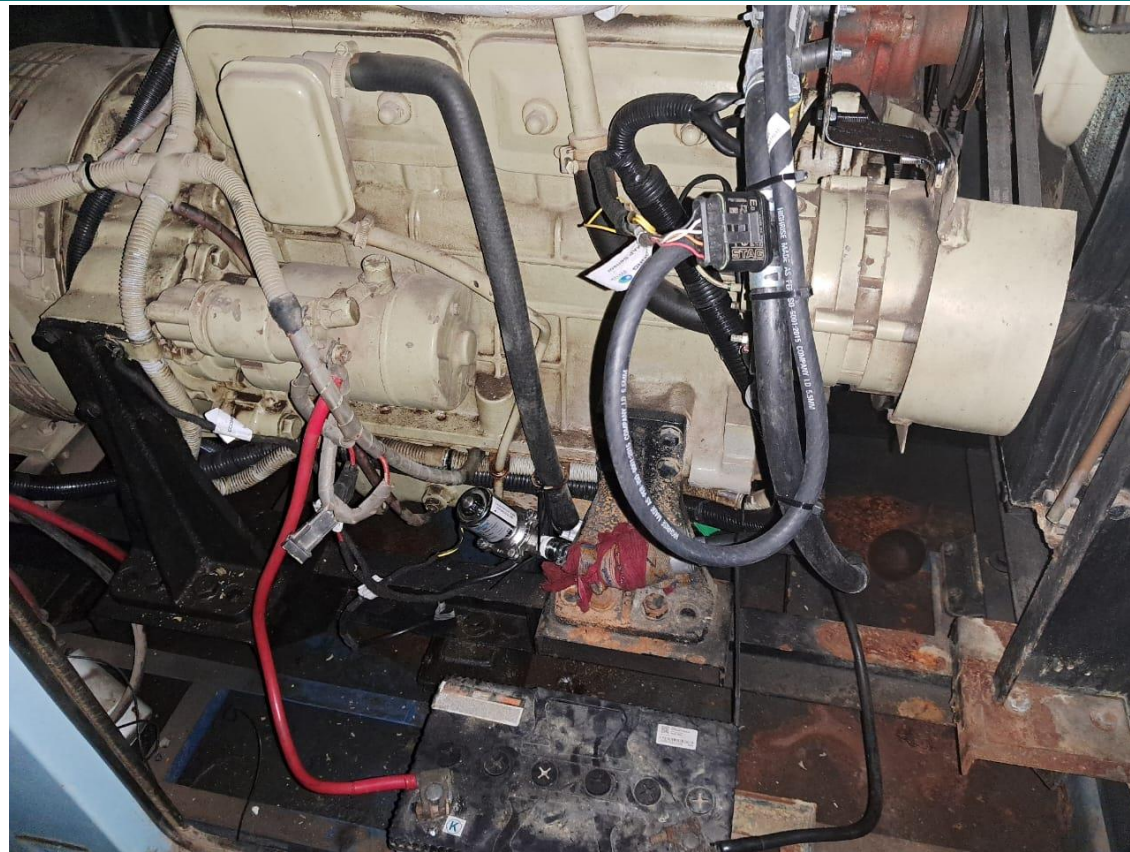
Diesel Generator running on EcoNrg Dual fuel system..



KOEL Genset- 62.5 Kva Installed with Econrg Dual Fuel System



Continued – KOEL 62.5 KVA



Contact Us



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DUALFUEL
SYSTEM

**THANK
YOU**