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auto gas equipment
group

***INSTALLATION GUIDELINES
FOR THE GASEOUS PHASE
LPG SEQUENTIAL INJECTION
SYSTEM***

CARS THAT CAN BE CONVERTED

- FUEL-INJECTION CARS WITH NATURALLY-ASPIRATED (N/A) PETROL ENGINES
- FUEL-INJECTION CARS WITH TURBO PETROL ENGINES

CARS THAT CANNOT BE CONVERTED

- CARS WITH DIESEL ENGINES
- CARBURETTOR CARS WITH PETROL ENGINES
- MECHANICAL-INJECTION CARS WITH PETROL ENGINES
- DIRECT-INJECTION CARS WITH PETROL ENGINES

SIS PLUS SYSTEM

- THE SYSTEM IS SUITABLE FOR ALL FUEL-INJECTION CARS WITH 3/4 CYLINDER N/A PETROL ENGINES

SIS SYSTEM

- THE SYSTEM IS SUITABLE FOR ALL FUEL-INJECTION CARS WITH 3/4/5/6/8 CYLINDER N/A PETROL ENGINES
- THE SYSTEM IS SUITABLE FOR ALL FUEL-INJECTION CARS WITH TURBO PETROL ENGINES (4/5/6/8 CYLINDERS)

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- 2. SYSTEM INSTALLATION***
- 3. SERVICING***

1. SYSTEM DESCRIPTION

REAR-END

- TANK
- MULTIVALVE
- FILLER

OTHER

- PIPING
- ACCESSORIES

FRONT-END

- REDUCER
- FILTER
- ELECTRO-INJECTORS
- ECU
- WIRING
- CHANGEOVER SWITCH
- BUZZER

1. SYSTEM DESCRIPTION

REAR-END

TANK

MULTIVALVE

FILLER

FRONT-END

REDUCER

FILTER

ELECTRO-INJECTORS

ECU

WIRING

CHANGEOVER SWITCH

BUZZER

OTHER

PIPING

ACCESSORIES



A container used for storing liquid phase LPG at a pressure of 10/15 bar. There exist two types of tanks:

- **cylinder**: it is mounted in the boot by means of special clamps and metal clips. It is hermetically sealed by means of a gas-tight housing and vent pipes.

- **toroidal**: it is mounted in place of the spare wheel by means of special clips or bearings.

- It is possible to mount tanks of various sizes within the allowed limit (depending on the current regulations).

Tanks do not require servicing, but they should be replaced every ten years.

1. SYSTEM DESCRIPTION

REAR-END

TANK

MULTIVALVOLA

FILLER

FRONT-END

REDUCER

FILTER

ELECTRO-INJECTORS

ECU

WIRING

CHANGEOVER SWITCH

BUZZER

OTHER

PIPING

ACCESSORIES



An electro-mechanical component mounted on the tank and equipped with:

a cut-off valve: limits the filling level to 80% of the tank capacity

a mechanical level gauge: indicates the tank liquid level

an overpressure safety valve: limits the tank pressure

a thermal fuse: limits the tank pressure when the temperature reaches a predetermined value

a manual shut-off valve/solenoid valve: opens or cuts off the LPG supply to the pressure reducer

an overflow valve: limits the LPG flow rate

1. SYSTEM DESCRIPTION

REAR-END

TANK

MULTIVALVOLA

FILLER

FRONT-END

REDUCER

FILTER

ELECTRO-INJECTORS

ECU

WIRING

CHANGEOVER SWITCH

BUZZER

OTHER

PIPING

ACCESSORIES



A mechanical component which serves to fill the tank.

It is connected to the multivalve by means of an 8 mm copper pipe.



1. SYSTEM DESCRIPTION

REAR-END

TANK

MULTIVALVOLA

FILLER

FRONT-END

REDUCER

FILTER

ELECTRO-INJECTORS

ECU

WIRING

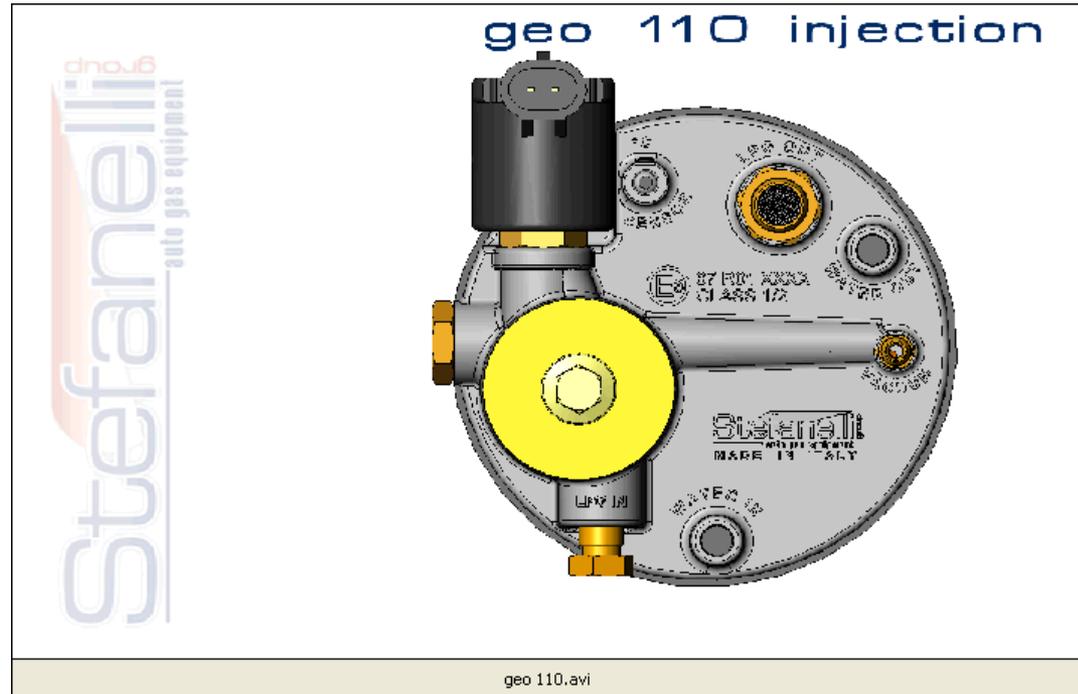
CHANGEOVER SWITCH

BUZZER

OTHER

PIPING

ACCESSORIES



A device designed to vaporize liquid LPG and to reduce the LPG pressure. The component consists of:

- **a liquid phase filter:** filters liquid LPG from the tank
- **a solenoid valve:** opens or cuts off the gas supply
- **a water temperature sensor:** monitors the reducer temperature
- **an overpressure valve:** limits the pressure inside the reducer

1. SYSTEM DESCRIPTION

Liquid gas, supplied from the tank at a pressure of 5÷15 bar by means of a copper pipe, enters the reducer through the pipe fitting [A]; it is filtered by the filtering element [1] and, entering through the hole [B], it fills the solenoid valve chamber [C].

When the engine is turned off or it is running on petrol, the solenoid valve group hermetically cuts off the LPG outlet [D] from the pipeline [E] by means of the spring [2] and the magnetic core [3] with the gasket [4].

When the engine is running on LPG, the coil [5], powered by 12V, creates a magnetic field which attracts the magnetic core [3], allowing LPG to flow out of the chamber [C] through the hole [C] towards the pipeline [E].

REAR-END

TANK

MULTIVALVOLA

FILLER

FRONT-END

REDUCER

FILTER

ELECTRO-INJECTORS

ECU

WIRING

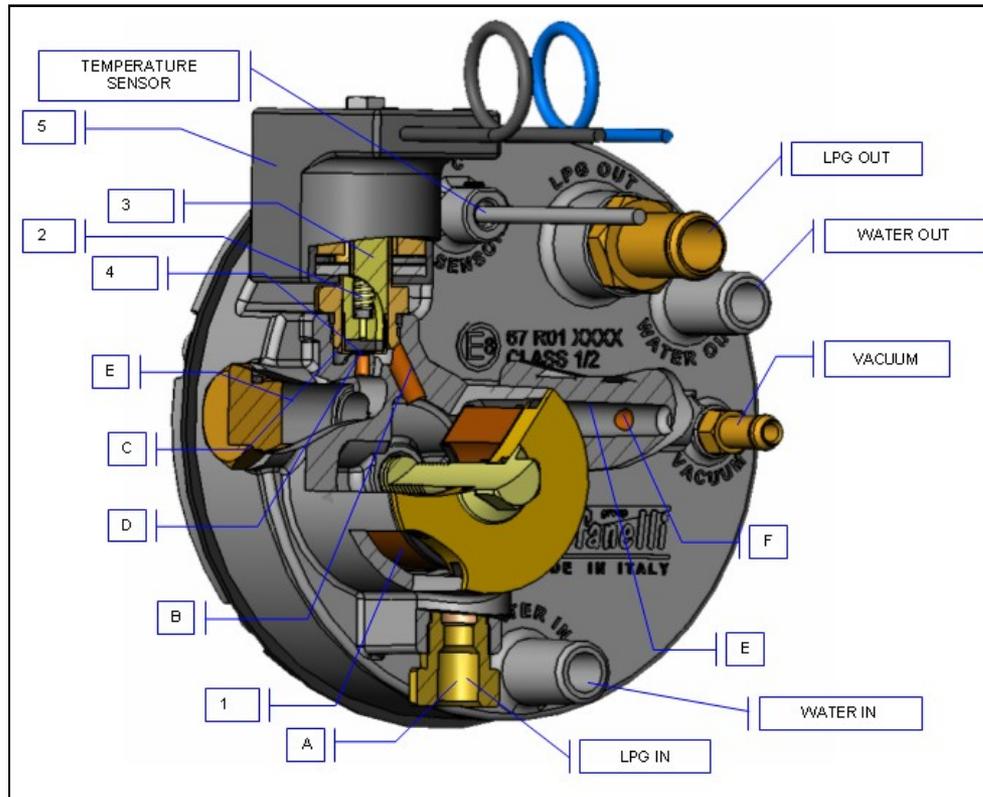
CHANGEOVER SWITCH

BUZZER

OTHER

PIPING

ACCESSORIES



1. SYSTEM DESCRIPTION

REAR-END

TANK

MULTIVALVOLA

FILLER

FRONT-END

REDUCER

FILTER

ELECTRO-INJECTORS

ECU

WIRING

CHANGEOVER SWITCH

BUZZER

OTHER

PIPING

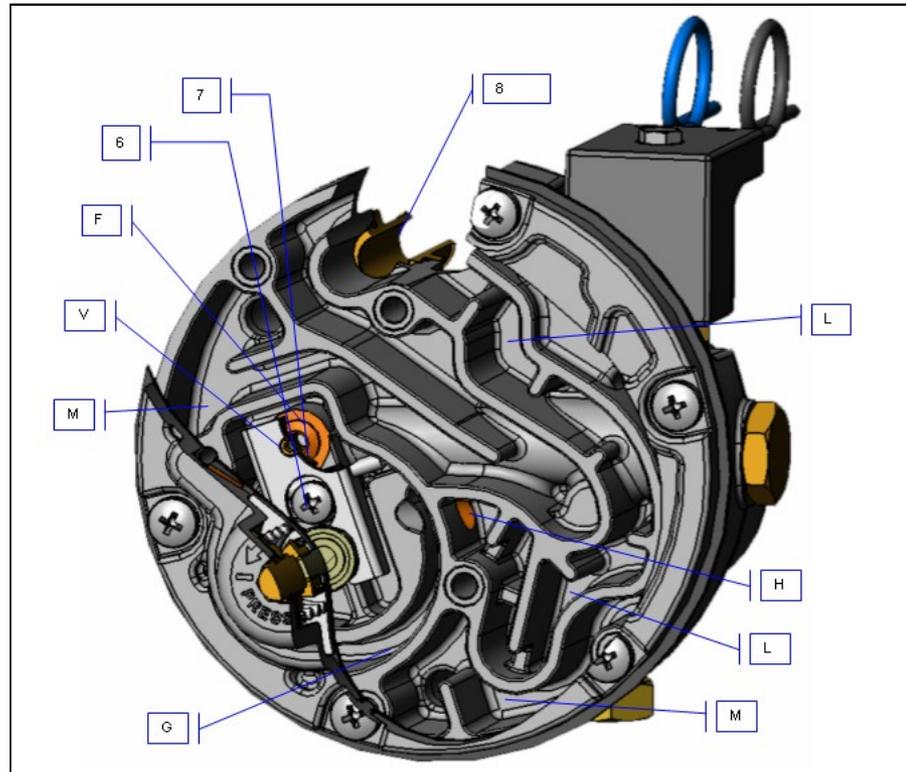
ACCESSORIES

Passing through the pipeline [E] and the mouth [F], the gas reaches the volume [G] which reduces the pressure to a value of $0.7 \div 1,5$ bar, determined by the elasticity of the spring and membrane which control the valve opening and closing process [V]; this valve consists of a lever [6] with a gasket port and a gasket [7].

The gas in the chamber [G] passes through the hole [H] in the volume [L] and, through the LPG outlet pipe fitting [8], it flows towards the gas phase LPG filter. In this volume [L] LPG undergoes

the vaporization process due to the engine refrigerant liquid ($30\text{ }^{\circ}\text{C} \div 90\text{ }^{\circ}\text{C}$) which wets the reducer through the chamber [M].

The temperature sensor reads the reducer temperature so that the ECU can monitor the fuel changeover process (petrol/LPG) and potential functioning defects.



1. SYSTEM DESCRIPTION

REAR-END

TANK

MULTIVALVOLA

FILLER

FRONT-END

REDUCER

FILTER

ELECTRO-INJECTORS

ECU

WIRING

CHANGEOVER SWITCH

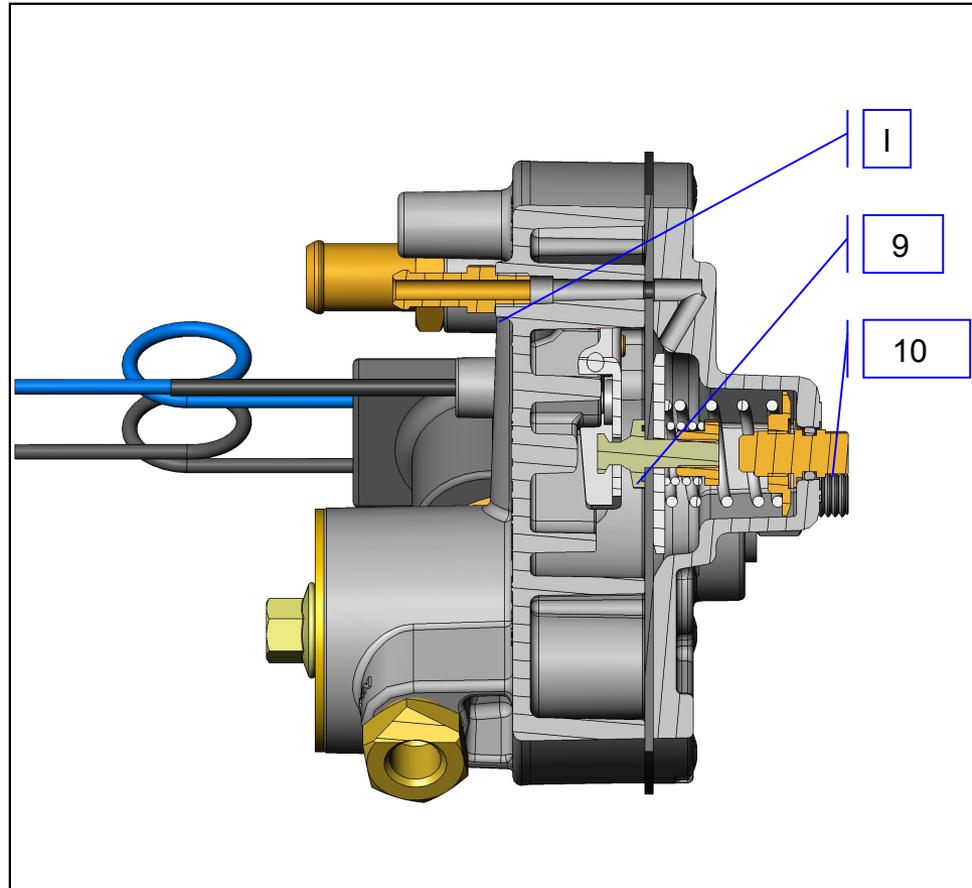
BUZZER

OTHER

PIPING

ACCESSORIES

An accidental overpressure is reduced by lifting the membrane from the stem [9], thus allowing LPG to go out through the hole [1] to reach the engine suction chamber; in such a situation the car engine turns off, indicating a system defect. The reducer is equipped with a register [10] to regulate the working pressure values.



1. SYSTEM DESCRIPTION

REAR-END

TANK

OVER 200 HP

MULTIVALVOLA

FILLER

FRONT-END

REDUCER

FILTER

ELECTRO-INJECTORS

ECU

WIRING

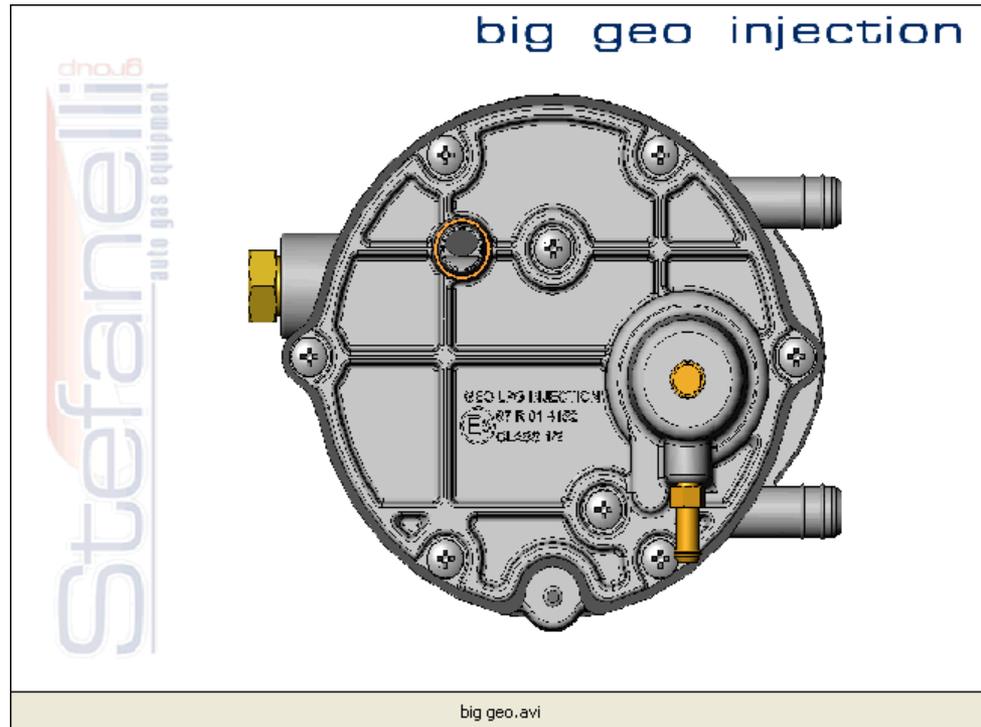
CHANGEOVER SWITCH

BUZZER

OTHER

PIPING

ACCESSORIES



1. SYSTEM DESCRIPTION

REAR-END

TANK

MULTIVALVOLA

FILLER

FRONT-END

REDUCER

FILTER

ELECTRO-INJECTORS

ECU

WIRING

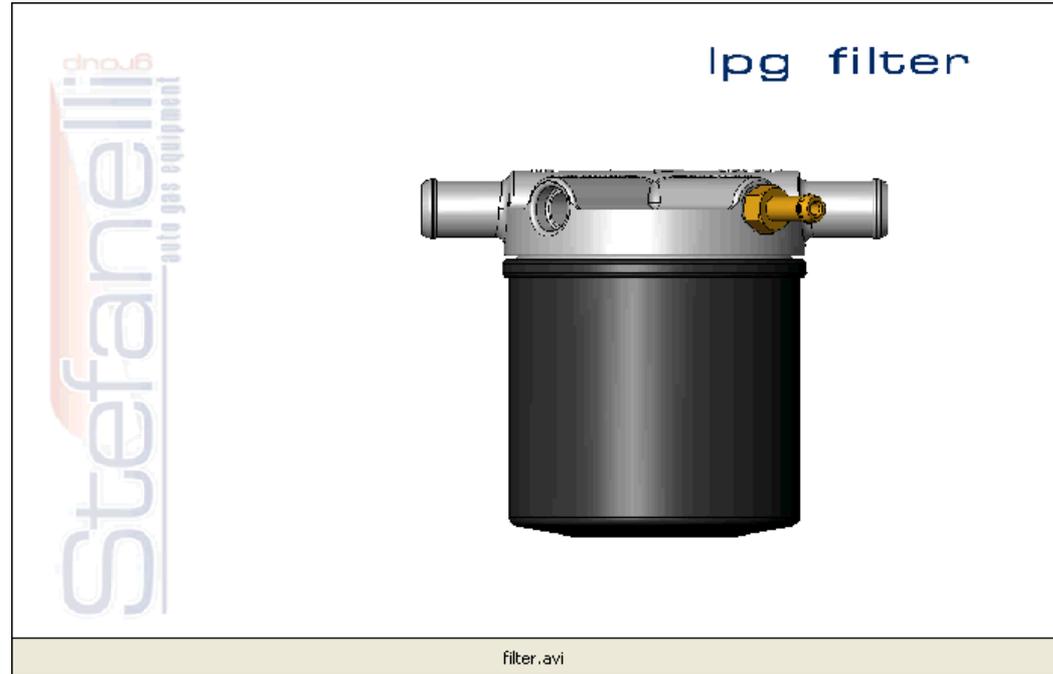
CHANGEOVER SWITCH

BUZZER

OTHER

PIPING

ACCESSORIES



The gaseous phase LPG filter is preset to prevent dirt from entering the electro-injectors and/or the engine combustion chamber.

It is equipped with a pressure port to connect the pressure sensor.

1. SYSTEM DESCRIPTION

REAR-END

TANK

MULTIVALVOLA

FILLER

FRONT-END

REDUCER

FILTER

ELECTRO-INJECTORS

ECU

WIRING

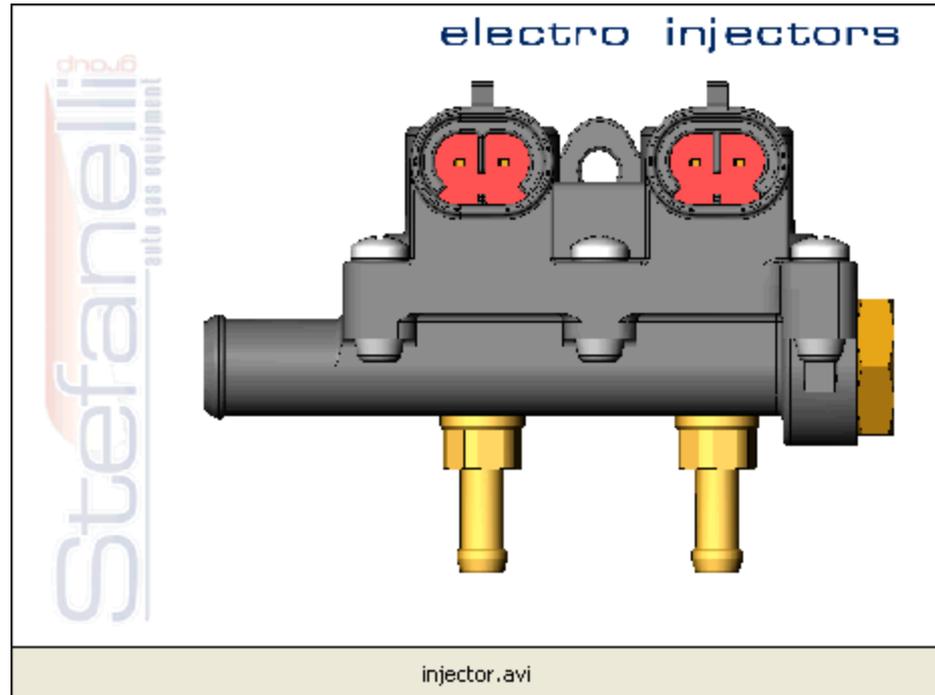
CHANGEOVER SWITCH

BUZZER

OTHER

PIPING

ACCESSORIES



A device which controls the injection of gas into the engine.

It consists of frequency controlled solenoid valves whose resistance is 14 Ohm.

There are three different types of nozzle calibration depending on the “power by cylinder” value of the car.

1. SYSTEM DESCRIPTION

The previously vaporized LPG passes from the filter into the electro-injector, filling the chambers C and D through the openings A and B.

When the engine is turned off or it is running on petrol, the electromagnetic system is switched off, cutting off LPG from the engine by means of the membrane closure.

When the engine is running on LPG, the electromagnetic system is frequency-controlled by the ECU so as to raise the membrane and to supply the fuel to the engine through the hole E.

REAR-END

TANK

MULTIVALVOLA

FILLER

FRONT-END

REDUCER

FILTER

ELECTRO-INJECTORS

ECU

WIRING

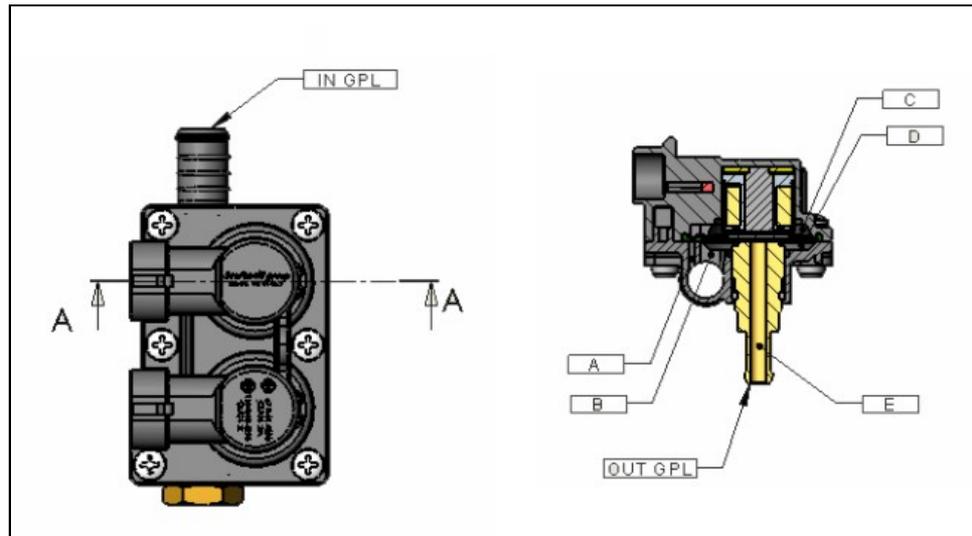
CHANGEOVER SWITCH

BUZZER

OTHER

PIPING

ACCESSORIES



1. SYSTEM DESCRIPTION

REAR-END

TANK

MULTIVALVOLA

FILLER

FRONT-END

REDUCER

FILTER

ELECTRO-INJECTORS

ECU

WIRING

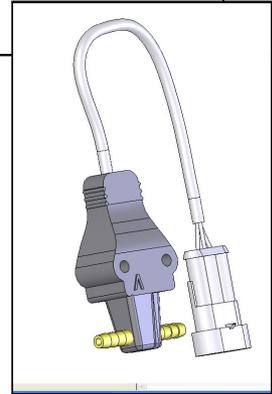
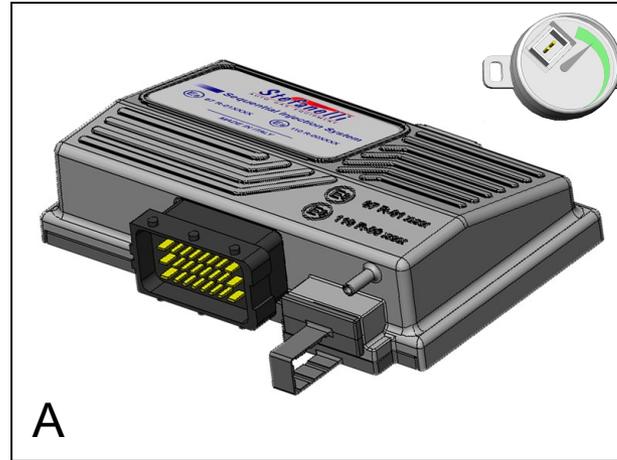
CHANGEOVER SWITCH

BUZZER

OTHER

PIPING

ACCESSORIES



A device which controls the LPG flow rate required by the engine by opening and closing the electro-injectors.

It is preset to automatically cut off the LPG supply in case the engine fails and/or stalls.

The ECU in Fig. A is designed for the SIS PLUS system and it has a pressure sensor incorporated. It comes with the 1050 level sensor (30 K Ω – 100 Ω).

The ECU in Fig. B is designed for the SIS system and it comes with an external differential pressure sensor and the 1090 level sensor (0 Ω – 90 Ω).



SIS PLUS data sheet



SIS data sheet

1. SYSTEM DESCRIPTION

SIS AND SIS PLUS FUNCTIONING STRATEGY

REAR-END

TANK

MULTIVALVOLA

FILLER

FRONT-END

REDUCER

FILTER

ELECTRO-INJECTORS

ECU

WIRING

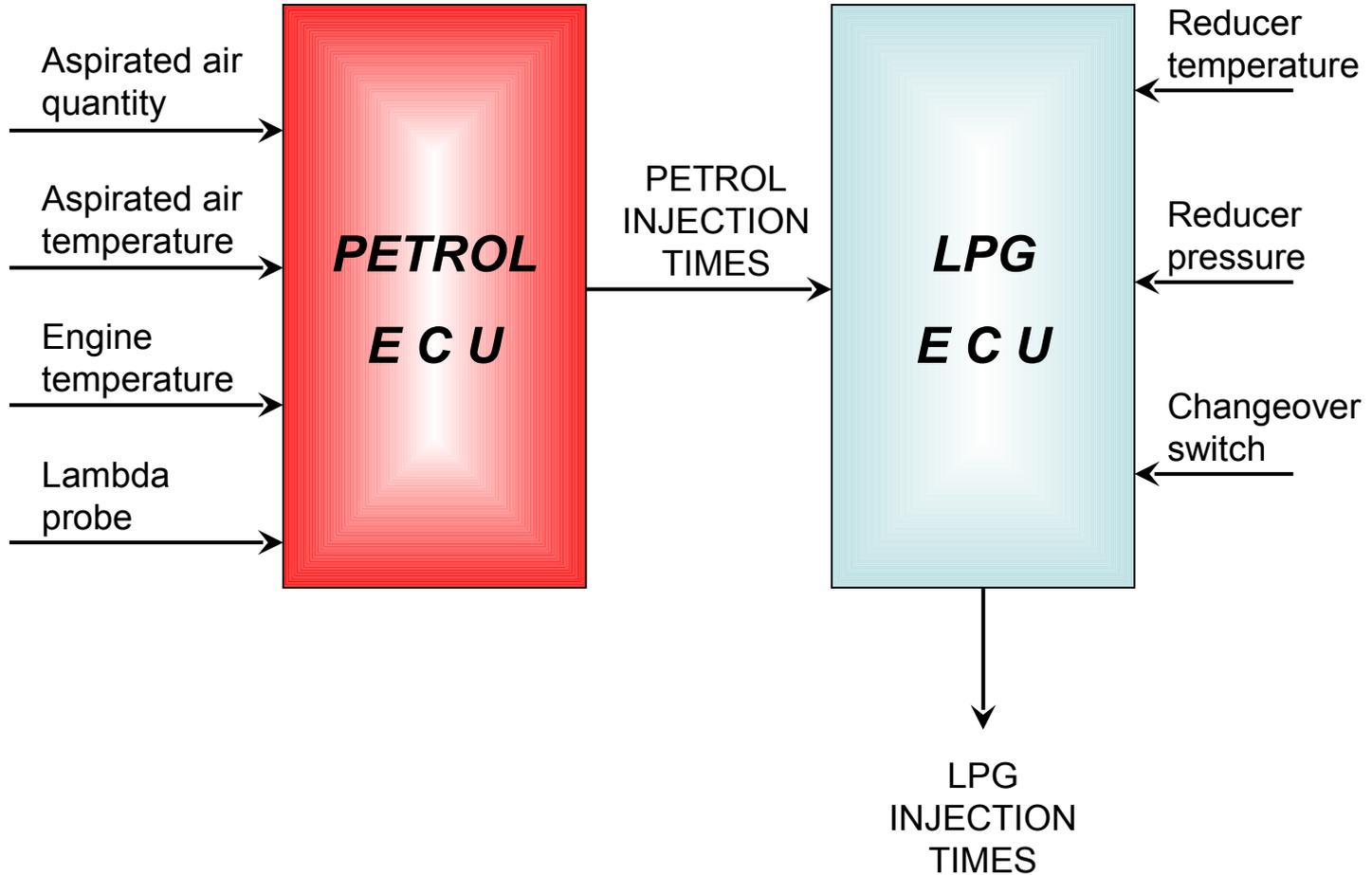
CHANGEOVER SWITCH

BUZZER

OTHER

PIPING

ACCESSORIES



1. SYSTEM DESCRIPTION

REAR-END

TANK

MULTIVALVOLA

FILLER

FRONT-END

REDUCER

FILTER

ELECTRO-INJECTORS

ECU

WIRING

CHANGEOVER SWITCH

BUZZER

OTHER

PIPING

ACCESSORIES



The electrical wiring connects the ECU to various system actuators. The connectors included in the kit are hermetic. The wiring harness in Fig. A refers to the SIS PLUS system and its main connector has 24 pins. It comes with another wire used for downloading data and for calibration. The wiring harness in Fig. B refers to the SIS system and its main connector has 56 pins.

1. SYSTEM DESCRIPTION

REAR-END

TANK

MULTIVALVOLA

FILLER

FRONT-END

REDUCER

FILTER

ELECTRO-INJECTORS

ECU

WIRING



It is a button which enables the driver to control various functions of the system. The control consists of:

- **1 red LED:** situated down on the right, indicates the current fuel status

- **4 green and 1 red LEDs:** situated in the upper part of the switch, indicate the current LPG status and the LPG tank level

- **a buzzer:** indicates the fuel mode changeover or system anomalies by means of sound signals.

OTHER

PIPING

ACCESSORIES

CHANGEOVER SWITCH

BUZZER

1. SYSTEM DESCRIPTION

REAR-END

TANK

MULTIVALVOLA

FILLER

FRONT-END

REDUCER

FILTER

ELECTRO-INJECTORS

ECU

WIRING

CHANGEOVER SWITCH

BUZZER

OTHER

PIPING

ACCESSORIES

PETROL AS THE SELECTED FUEL

**THE ENGINE IS RUNNING ON PETROL
CONSTANT LED ON**



LPG AS THE SELECTED FUEL

**THE ENGINE IS RUNNING ON
PETROL WHILE GETTING READY TO
SWITCH OVER TO LPG
FLASHING LED ON**



**THE ENGINE IS RUNNING ON LPG
LEVEL LEDs ON**



1. SYSTEM DESCRIPTION

REAR-END

TANK

MULTIVALVOLA

FILLER

FRONT-END

REDUCER

FILTER

ELECTRO-INJECTORS

ECU

WIRING

CHANGEOVER SWITCH

BUZZER

OTHER

PIPING

ACCESSORIES

FUEL SELECTION FROM PETROL TO LPG



FUEL SELECTION FROM LPG TO PETROL



1. SYSTEM DESCRIPTION

REAR-END

AUTOMATIC CHANGEOVER FROM PETROL TO LPG

TANK

MULTIVALVOLA

FILLER

FRONT-END

REDUCER

FILTER

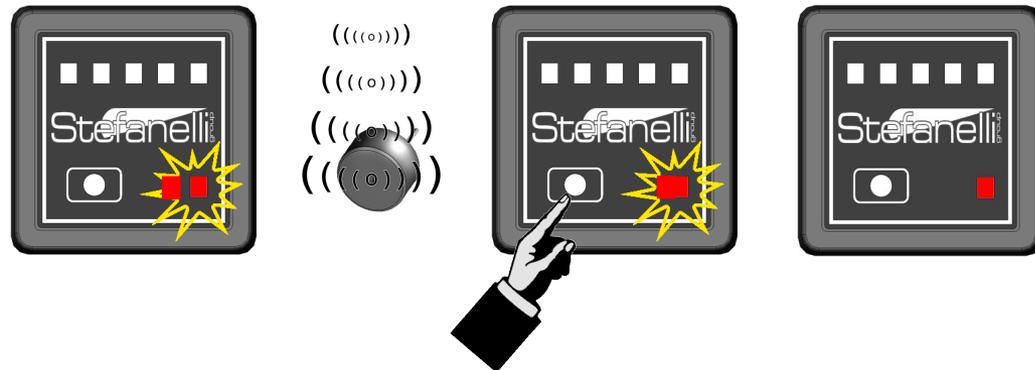
ELECTRO-INJECTORS

ECU

WIRING



LPG LOW PRESSURE ALARM



CHANGEOVER SWITCH

BUZZER

OTHER

PIPING

ACCESSORIES

1. SYSTEM DESCRIPTION

AUTOMATIC CHANGEOVER FROM LPG TO PETROL WITH AN ALARM SIGNAL

REAR-END

TANK

MULTIVALVOLA

FILLER

FRONT-END

REDUCER

FILTER

ELECTRO-INJECTORS

ECU

WIRING

CHANGEOVER SWITCH

BUZZER

OTHER

PIPING

ACCESSORIES



1. SYSTEM DESCRIPTION

REAR-END

TANK

MULTIVALVOLA

FILLER

FRONT-END

REDUCER

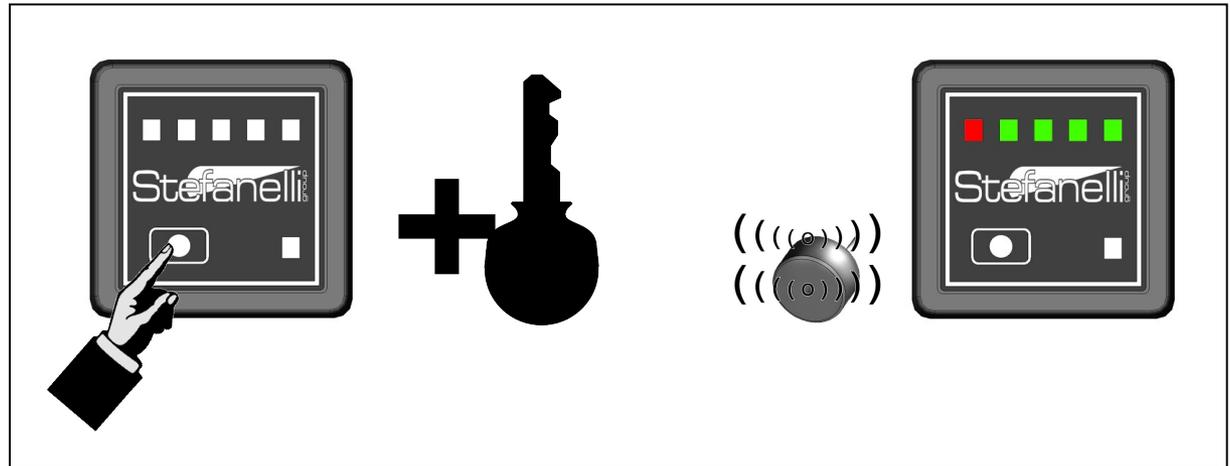
FILTER

ELECTRO-INJECTORS

ECU

WIRING

EMERGENCY FUNCTION



CHANGEOVER SWITCH

BUZZER

OTHER

PIPING

ACCESSORIES

1. SYSTEM DESCRIPTION

REAR-END

TANK

MULTIVALVOLA

FILLER

FRONT-END

REDUCER

FILTER

ELECTRO-INJECTORS

ECU

WIRING

CHANGEOVER SWITCH

BUZZER

OTHER

PIPING

ACCESSORIES



The system comes with a set of copper (for high pressure LPG connections) and rubber (for low pressure LPG connections) piping, homologated in accordance with the current regulations.

The kits are also equipped with a set of minor accessories (clips, clamps, screw bolts) necessary for the installation of the piping and various injection kit components.

2. SYSTEM INSTALLATION

- PETROL SYSTEM CONTROL
- MECHANICAL INSTALLATION DIAGRAM
- ELECTRICAL WIRING DIAGRAM
- CALIBRATION AND TUNING

2. SYSTEM INSTALLATION

PETROL SYSTEM CONTROL

➤ **SPARK PLUGS CONTROL**

MECHANICAL INSTALLATION DIAGRAM

➤ **AIR FILTER CONTROL**

ELECTRICAL WIRING DIAGRAM

➤ **SPARK PLUG/COIL WIRES CONTROL**

CALIBRATION AND TUNING

➤ **LAMBDA PROBE CONTROL**

2. SYSTEM INSTALLATION

**PETROL SYSTEM
CONTROL**

➤ **SIS PLUS 4 CYLINDERS N/A**

**MECHANICAL
INSTALLATION
DIAGRAM**

➤ **SIS 4 CYLINDERS**

➤ **SIS 6 CYLINDERS IN-LINE**

**ELECTRICAL WIRING
DIAGRAM**

➤ **SIS 6 CYLINDERS “V”-SHAPED**

**CALIBRATION AND
TUNING**

➤ **SIS 8 CYLINDERS**

2. SYSTEM INSTALLATION

**PETROL SYSTEM
CONTROL**

**MECHANICAL
INSTALLATION
DIAGRAM**

**ELECTRICAL WIRING
DIAGRAM**

**CALIBRATION AND
TUNING**

REDUCER SELECTION

| POWER | | RELATIVE PRESSURE (bar) | REDUCER |
|------------|-----------|---------------------------|-------------|
| <i>kW</i> | <i>hp</i> | <i>With the engine on</i> | |
| Up to 73.5 | Up to 100 | 0.7 ÷ 1.0 | GEO 110 "N" |
| 73.5 ÷ 110 | 100 ÷ 150 | Max 1.25 | GEO 110 "N" |
| 110 ÷ 147 | 150 ÷ 200 | Max 1.3 | GEO 110 "M" |
| 147 ÷ 184 | 150 ÷ 250 | Max 1.3 | BIG GEO |

ELECTRO-INJECTORS SELECTION

| POWER BY CYLINDER | | ELECTRO-INJECTORS |
|-------------------|-----------|-------------------|
| <i>kW</i> | <i>hp</i> | |
| 9,5 ÷ 16,5 | 13 ÷ 22 | GREEN |
| 16,75 ÷ 21,25 | 23 ÷ 29 | WHITE |
| 21,5 ÷ 30 | 29,5 ÷ 41 | RED |

EXAMPLE

- Fiat Doblò 1.6 76 kW 4 cylinders
- $76 \div 4 = 19$ kW
- Corresponds to the WHITE section in the table
- Install WHITE electro-injectors

2. SYSTEM INSTALLATION

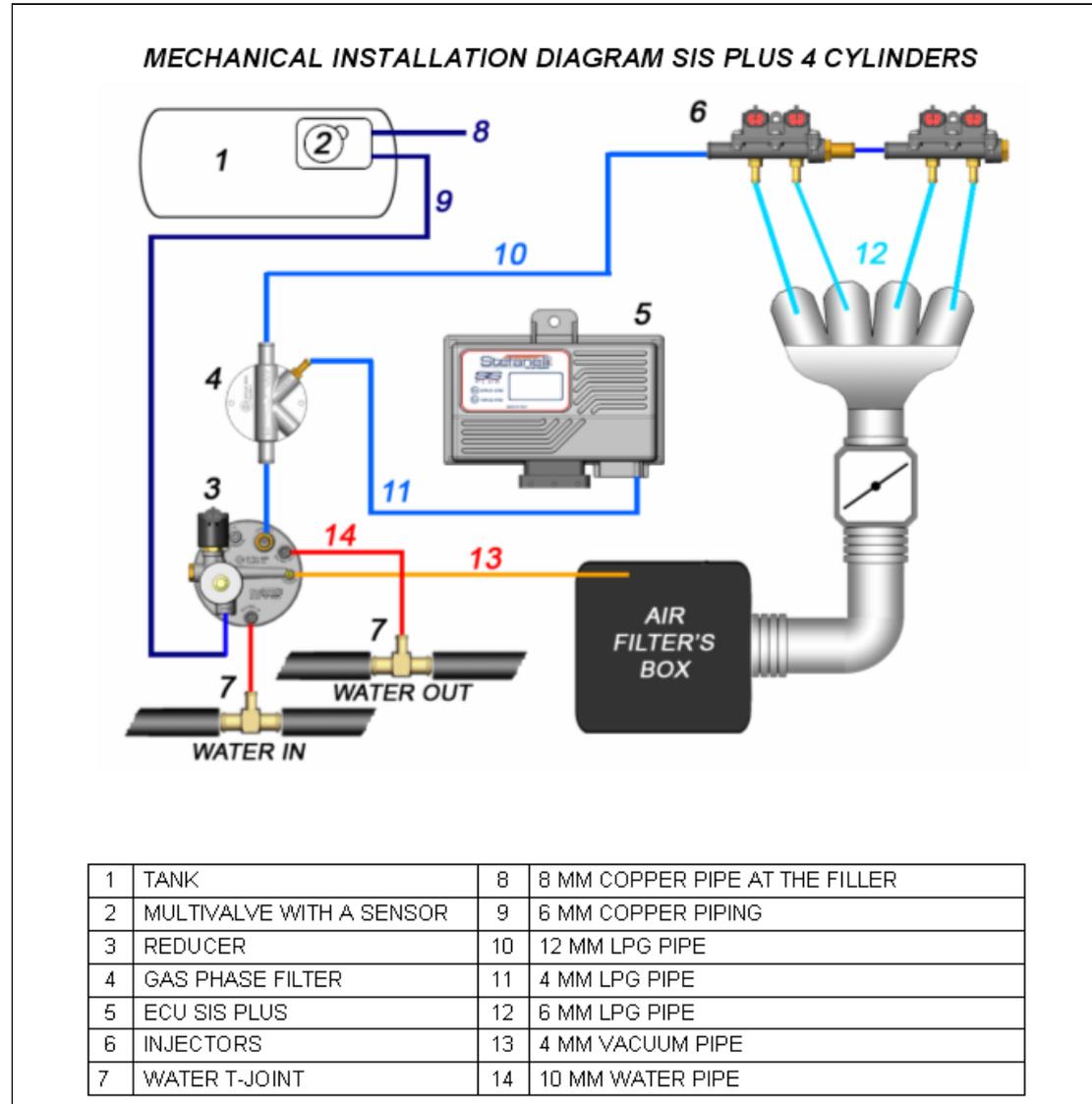
SIS PLUS 4 CYLINDERS N/A

PETROL SYSTEM CONTROL

MECHANICAL INSTALLATION DIAGRAM

ELECTRICAL WIRING DIAGRAM

CALIBRATION AND TUNING



2. SYSTEM INSTALLATION

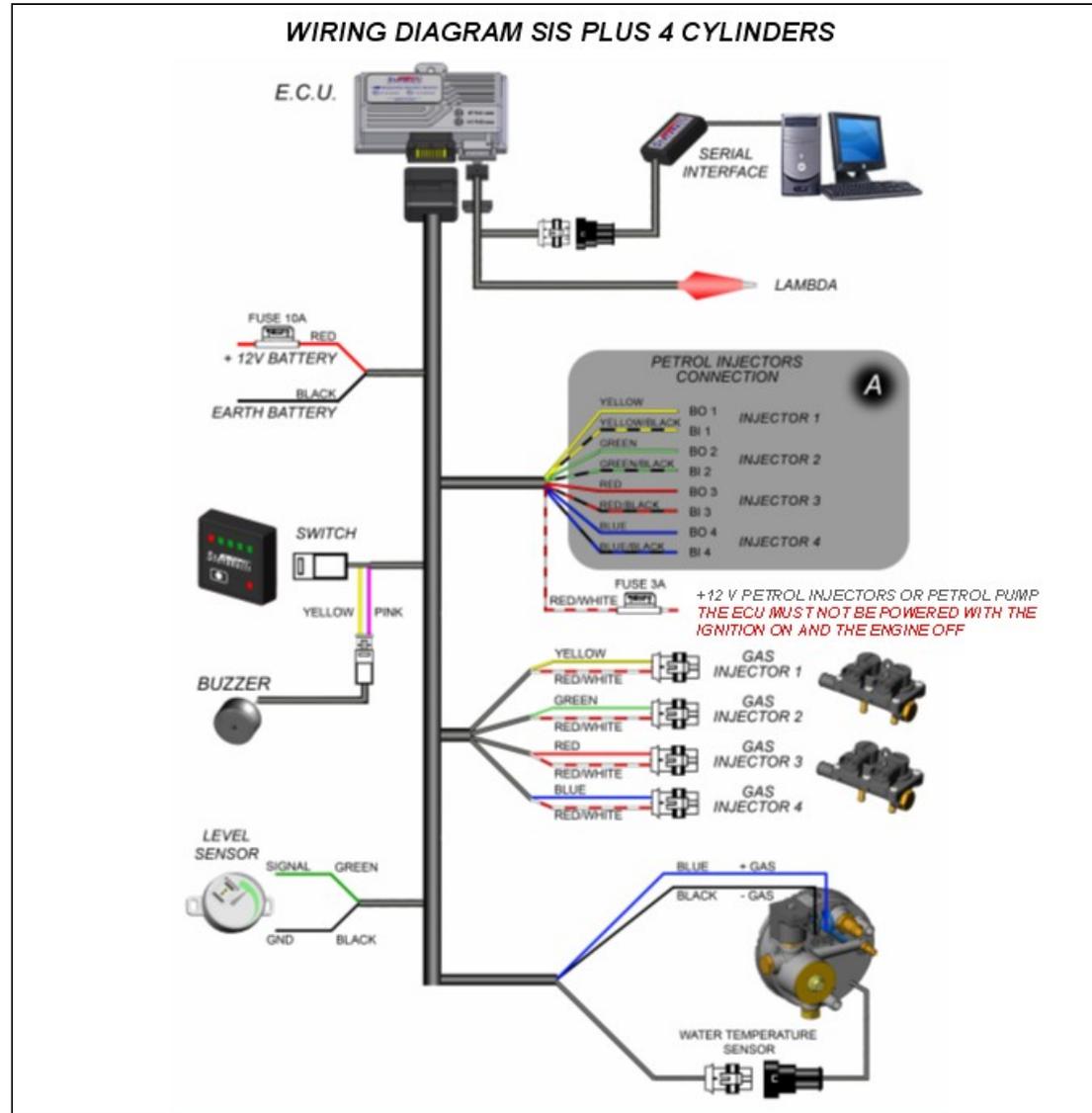
SIS PLUS 4 CYLINDERS N/A

PETROL SYSTEM CONTROL

MECHANICAL INSTALLATION DIAGRAM

ELECTRICAL WIRING DIAGRAM

CALIBRATION AND TUNING



2. SYSTEM INSTALLATION

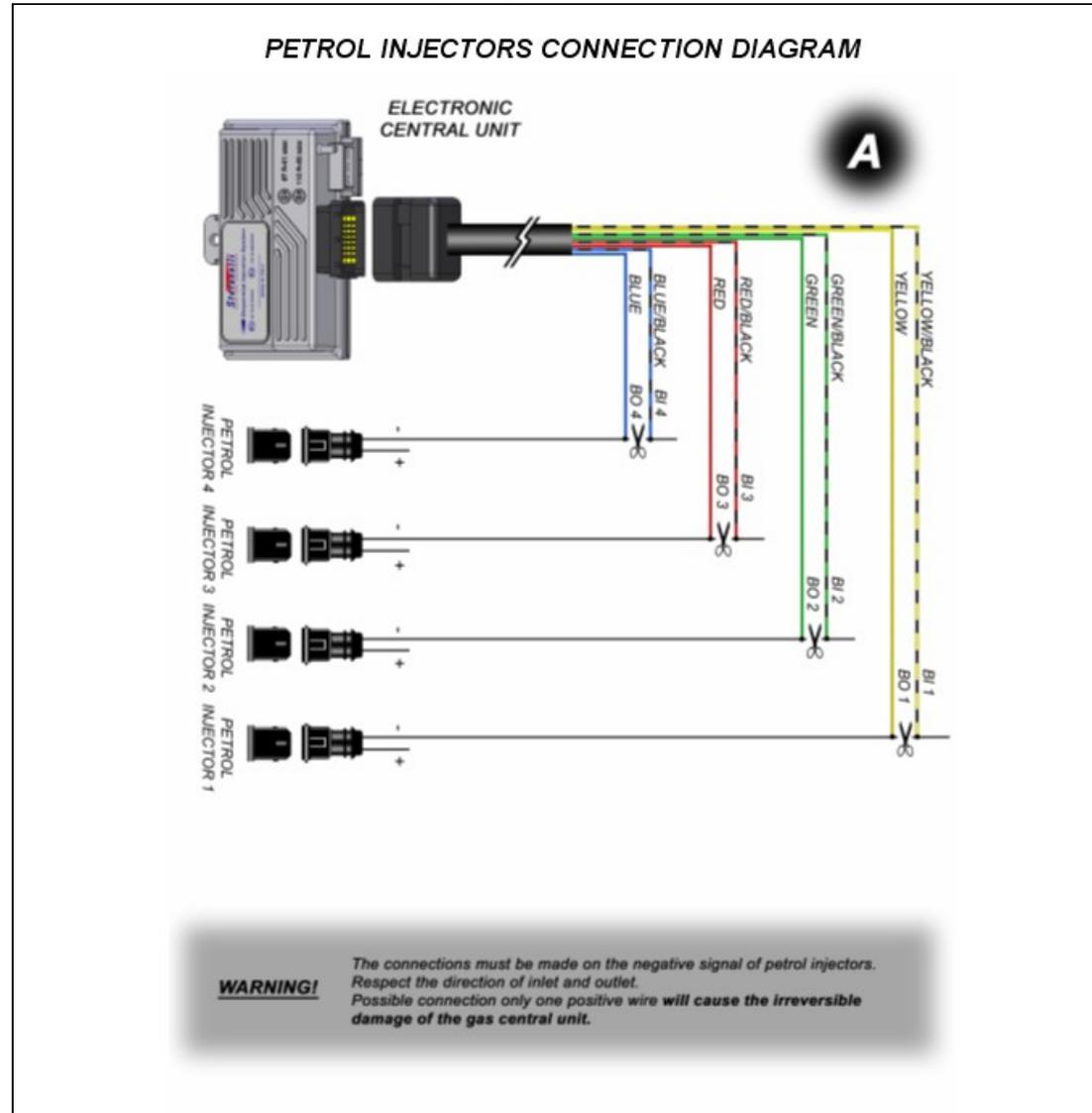
SIS PLUS 4 CYLINDERS N/A

PETROL SYSTEM CONTROL

MECHANICAL INSTALLATION DIAGRAM

ELECTRICAL WIRING DIAGRAM

CALIBRATION AND TUNING



2. SYSTEM INSTALLATION

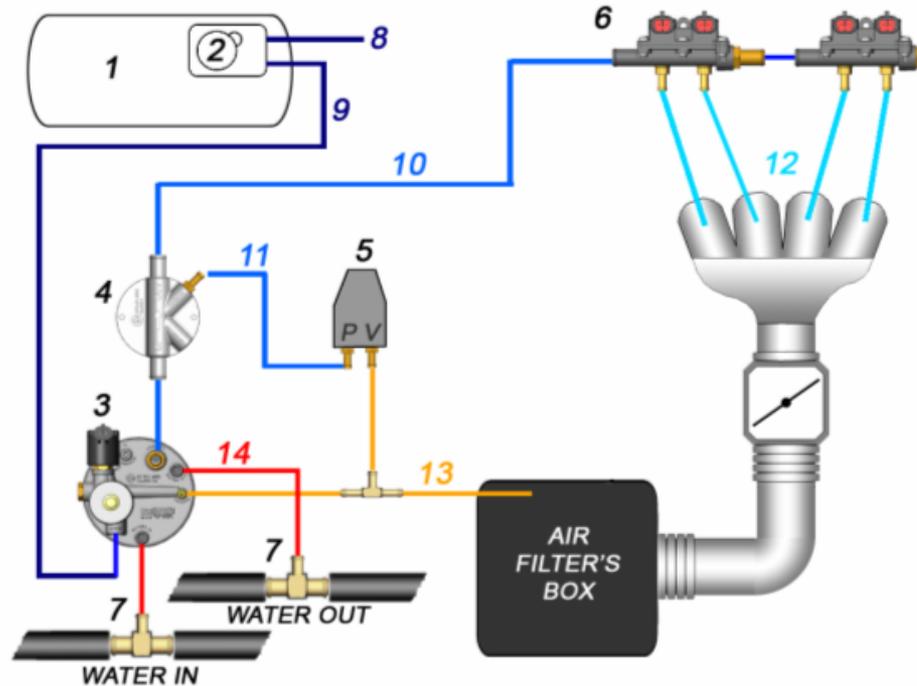
SIS 4 CYLINDERS

PETROL SYSTEM CONTROL

MECHANICAL INSTALLATION DIAGRAM

ELECTRICAL WIRING DIAGRAM

CALIBRATION AND TUNING



| | | | |
|---|--------------------------|----|--------------------------------|
| 1 | TANK | 8 | 8 MM COPPER PIPE AT THE FILLER |
| 2 | MULTIVALVE WITH A SENSOR | 9 | 6 MM / 8MM COPPER PIPING |
| 3 | REDUCER | 10 | 12 MM LPG PIPE |
| 4 | GAS PHASE FILTER | 11 | 4 MM LPG PIPE |
| 5 | PRESSURE SENSOR | 12 | 6 MM LPG PIPE |
| 6 | INJECTORS | 13 | 4 MM VACUUM PIPE |
| 7 | WATER T-JOINT | 14 | 10 MM WATER PIPE |

2. SYSTEM INSTALLATION

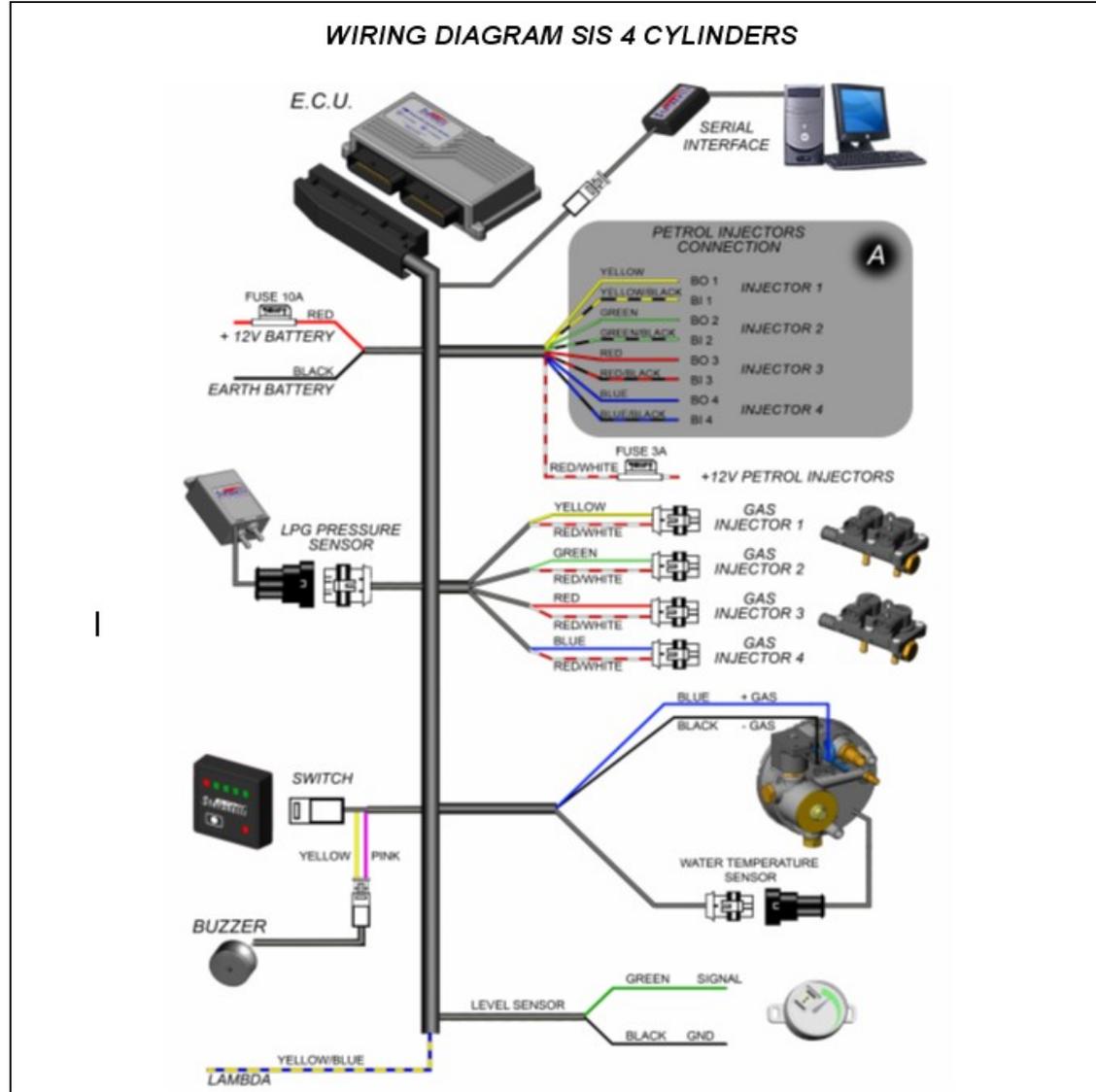
SIS 4 CYLINDERS

PETROL SYSTEM CONTROL

MECHANICAL INSTALLATION DIAGRAM

ELECTRICAL WIRING DIAGRAM

CALIBRATION AND TUNING



2. SYSTEM INSTALLATION

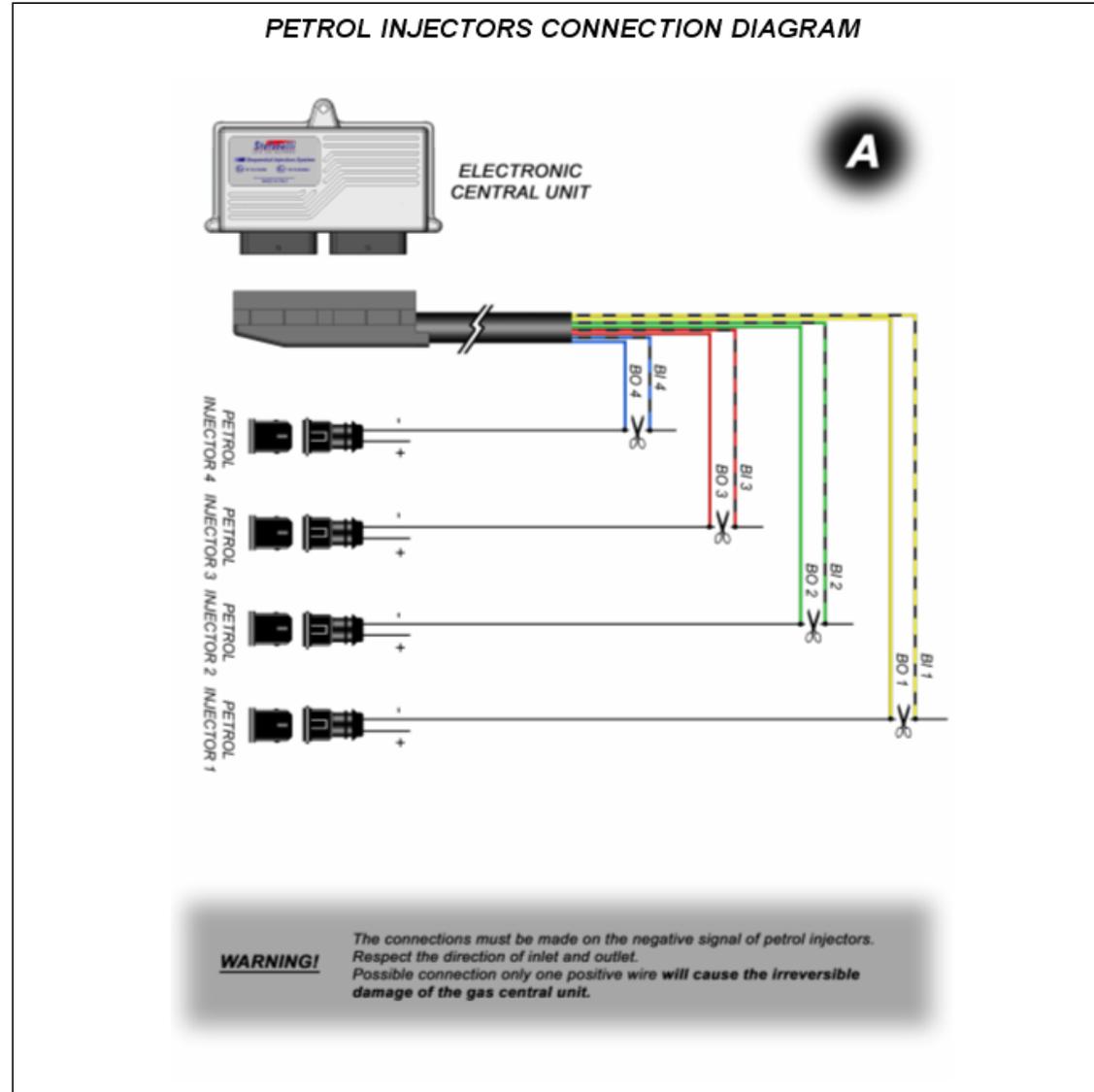
SIS 4 CYLINDERS

PETROL SYSTEM CONTROL

MECHANICAL INSTALLATION DIAGRAM

ELECTRICAL WIRING DIAGRAM

CALIBRATION AND TUNING



2. SYSTEM INSTALLATION

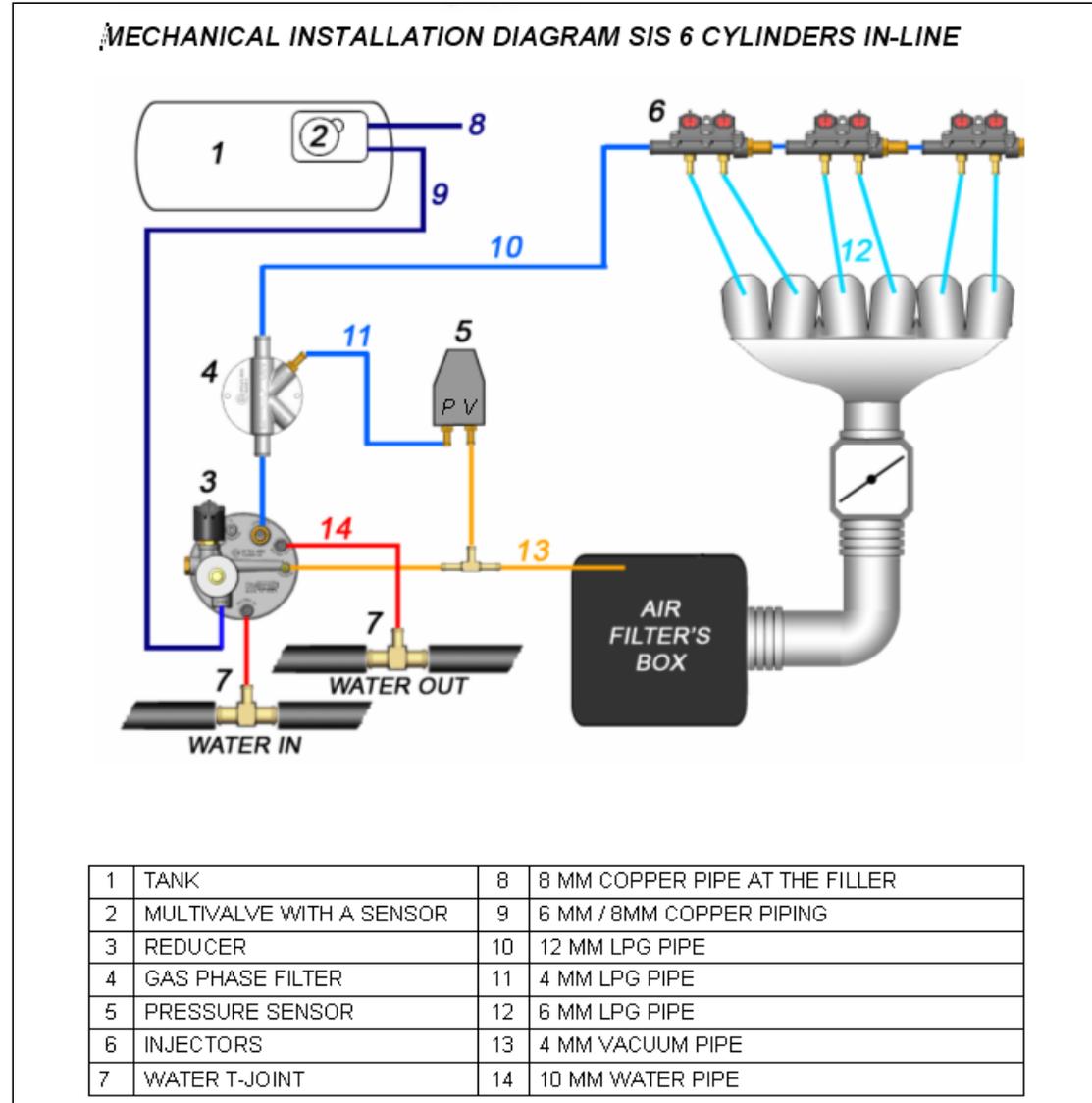
SIS 6 CYLINDERS IN-LINE

**PETROL SYSTEM
CONTROL**

**MECHANICAL
INSTALLATION
DIAGRAM**

**ELECTRICAL WIRING
DIAGRAM**

**CALIBRATION AND
TUNING**



2. SYSTEM INSTALLATION

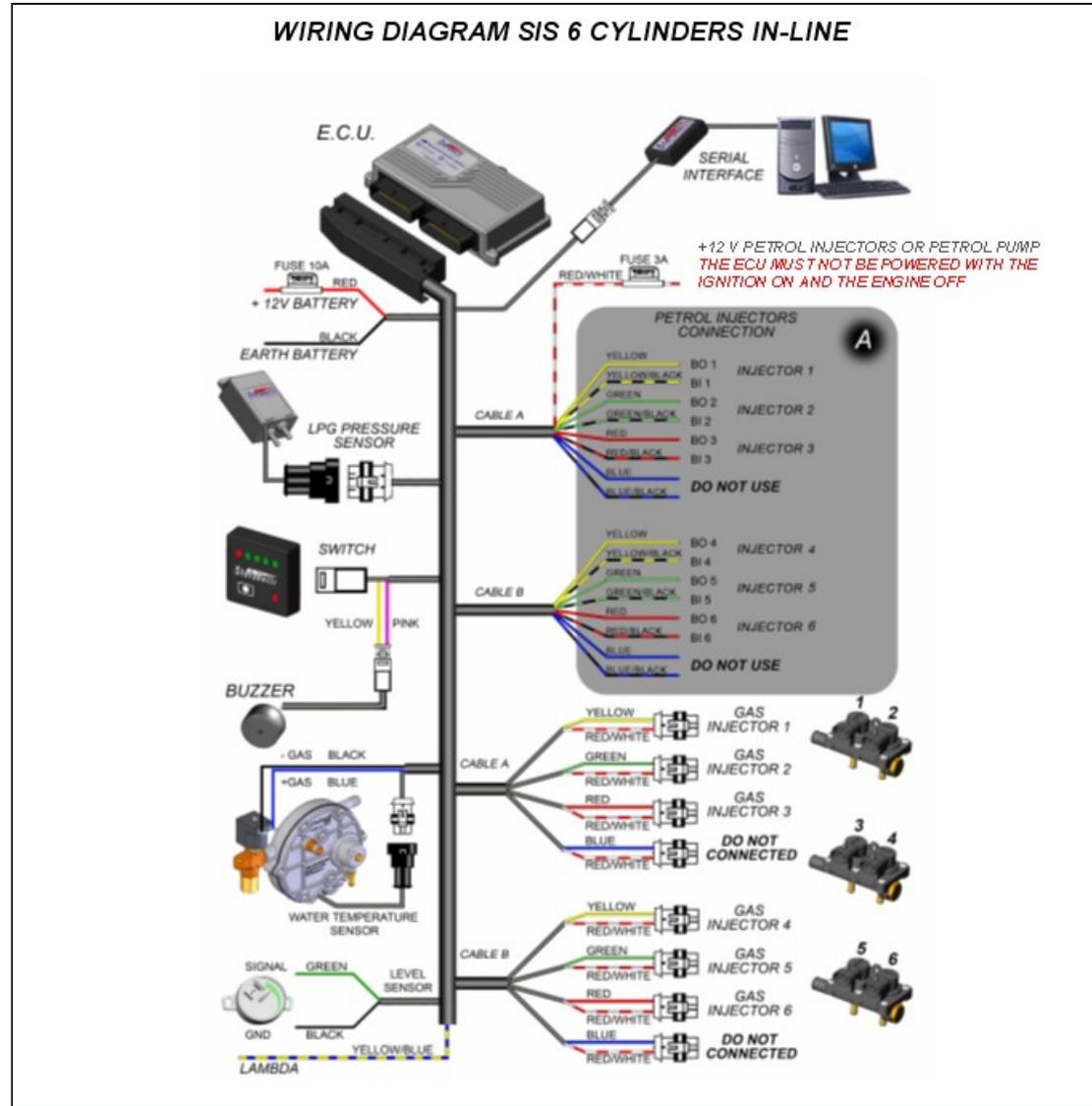
SIS 6 CYLINDERS IN-LINE

PETROL SYSTEM CONTROL

MECHANICAL INSTALLATION DIAGRAM

ELECTRICAL WIRING DIAGRAM

CALIBRATION AND TUNING



2. SYSTEM INSTALLATION

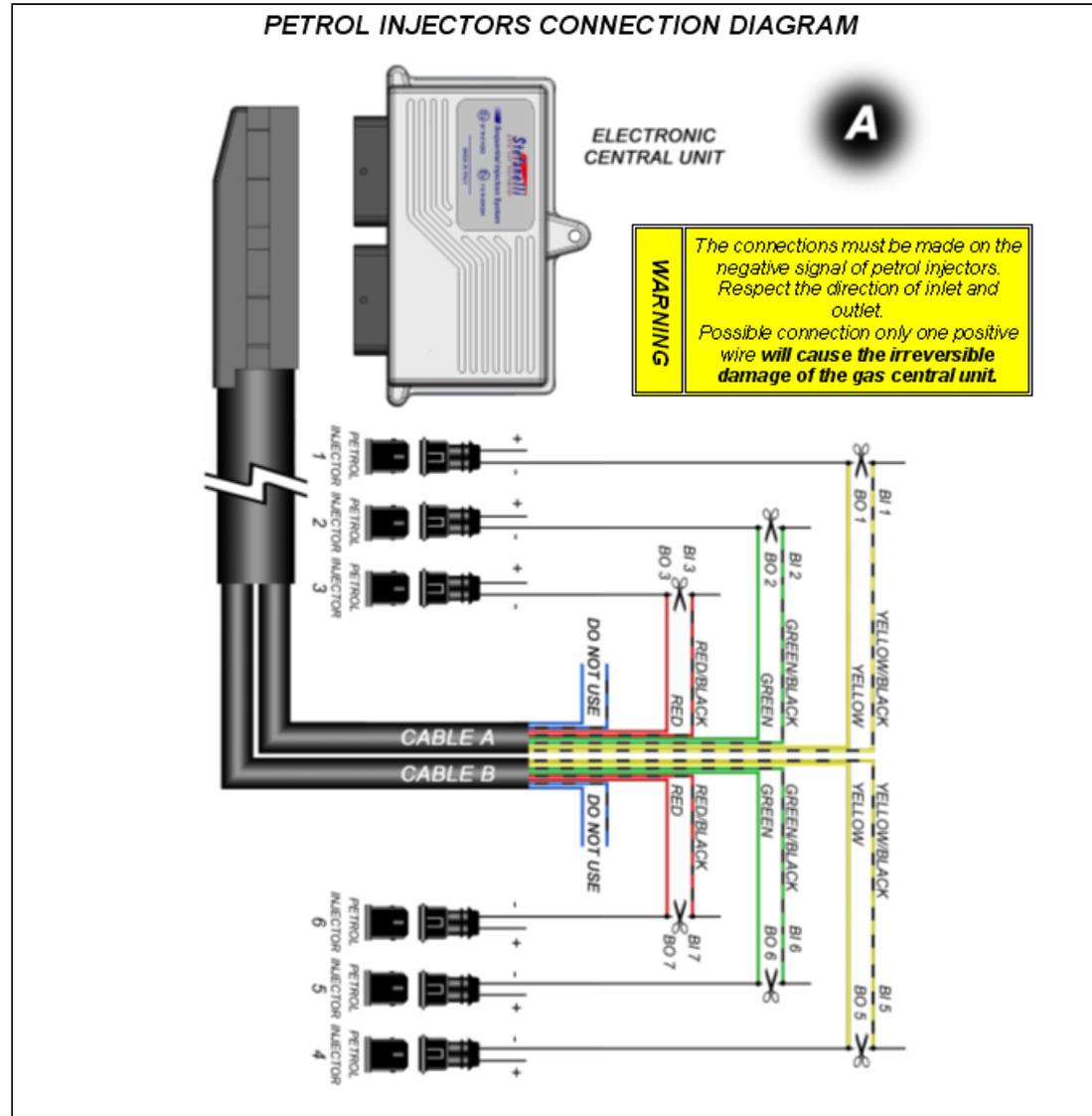
SIS 6 CYLINDERS IN-LINE

PETROL SYSTEM CONTROL

MECHANICAL INSTALLATION DIAGRAM

ELECTRICAL WIRING DIAGRAM

CALIBRATION AND TUNING



2. SYSTEM INSTALLATION

SIS 6 CYLINDERS "V"-SHAPED

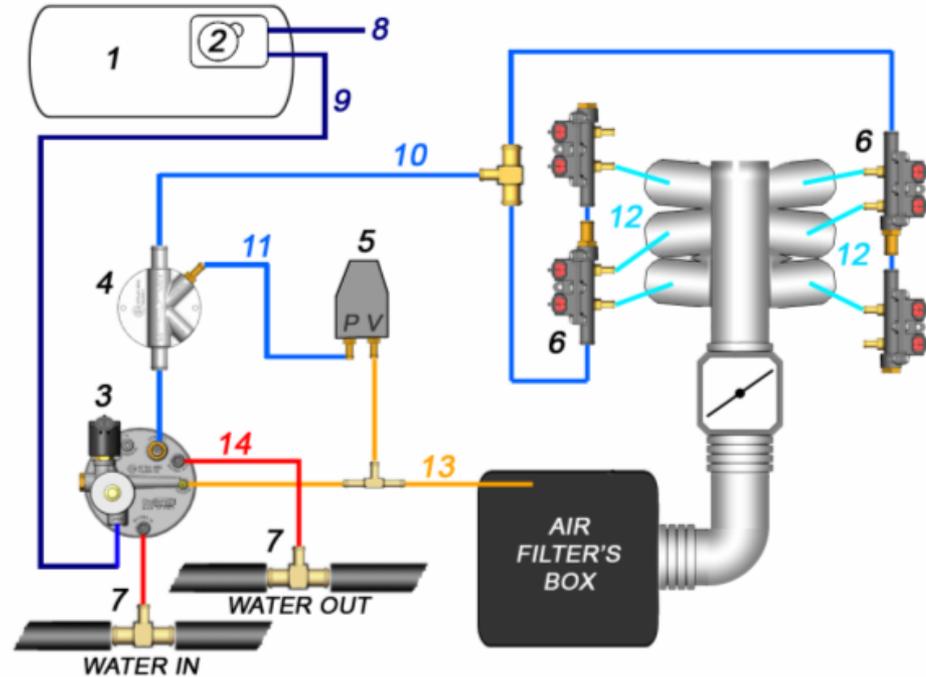
**PETROL SYSTEM
CONTROL**

**MECHANICAL
INSTALLATION
DIAGRAM**

**ELECTRICAL WIRING
DIAGRAM**

**CALIBRATION AND
TUNING**

MECHANICAL INSTALLATION DIAGRAM SIS 6 CYLINDERS "V"-SHAPED



| | | | |
|---|--------------------------|----|--------------------------------|
| 1 | TANK | 8 | 8 MM COPPER PIPE AT THE FILLER |
| 2 | MULTIVALVE WITH A SENSOR | 9 | 6 MM / 8MM COPPER PIPING |
| 3 | REDUCER | 10 | 12 MM LPG PIPE |
| 4 | GAS PHASE FILTER | 11 | 4 MM LPG PIPE |
| 5 | PRESSURE SENSOR | 12 | 6 MM LPG PIPE |
| 6 | INJECTORS | 13 | 4 MM VACUUM PIPE |
| 7 | WATER T-JOINT | 14 | 10 MM WATER PIPE |

2. SYSTEM INSTALLATION

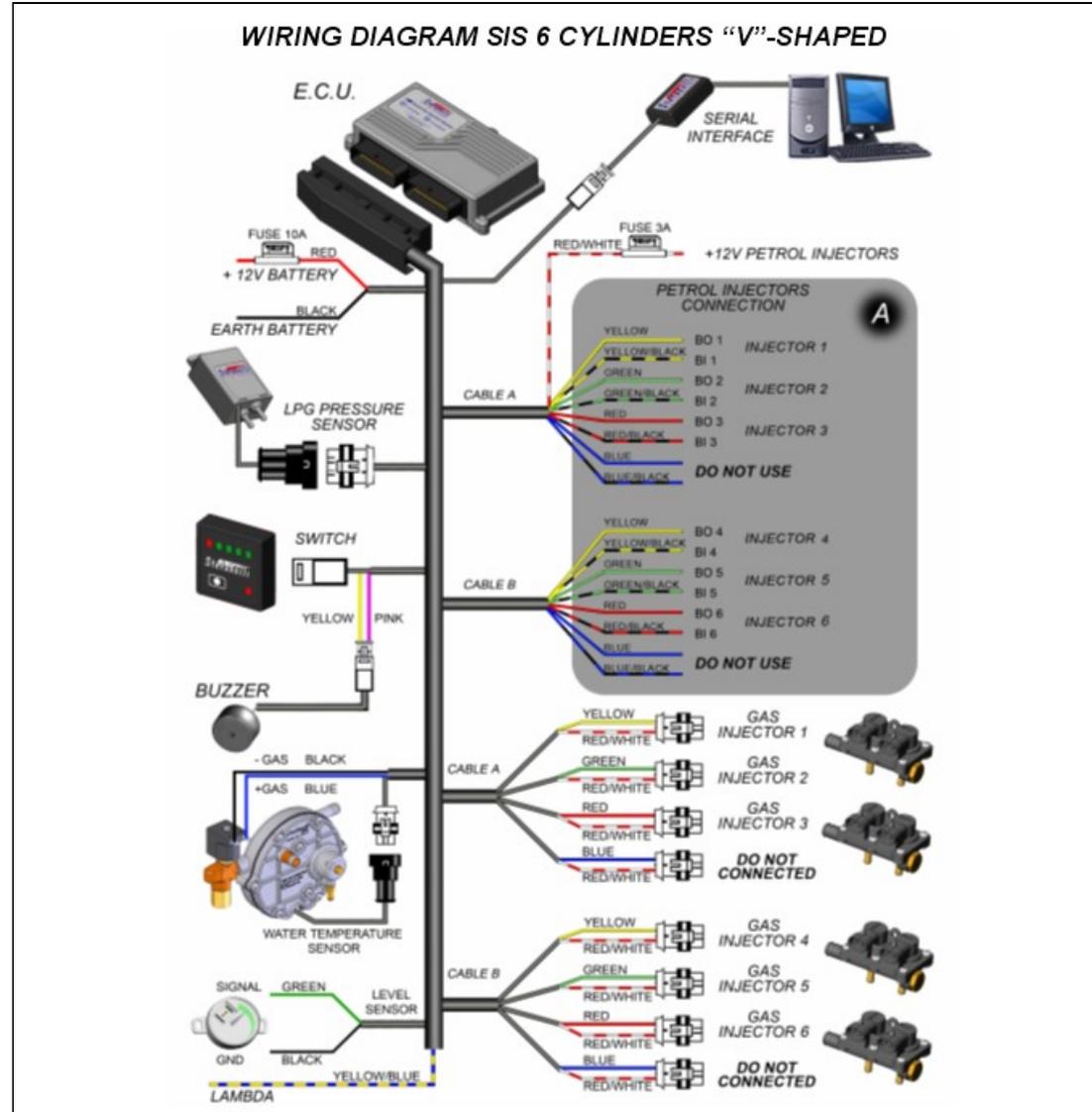
SIS 6 CYLINDERS "V"-SHAPED

PETROL SYSTEM CONTROL

MECHANICAL INSTALLATION DIAGRAM

ELECTRICAL WIRING DIAGRAM

CALIBRATION AND TUNING



2. SYSTEM INSTALLATION

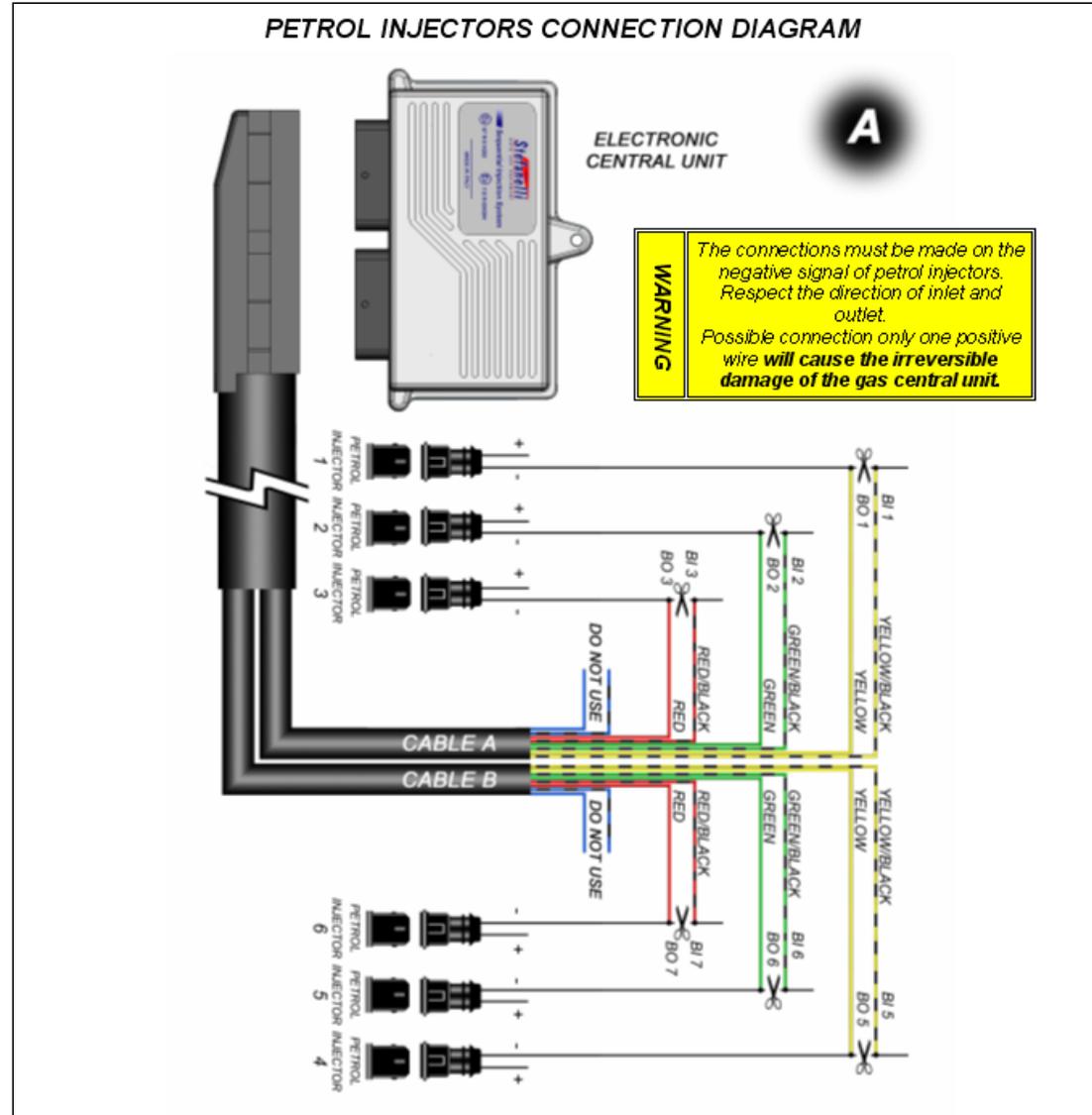
SIS 6 CYLINDERS "V"-SHAPED

PETROL SYSTEM CONTROL

MECHANICAL INSTALLATION DIAGRAM

ELECTRICAL WIRING DIAGRAM

CALIBRATION AND TUNING



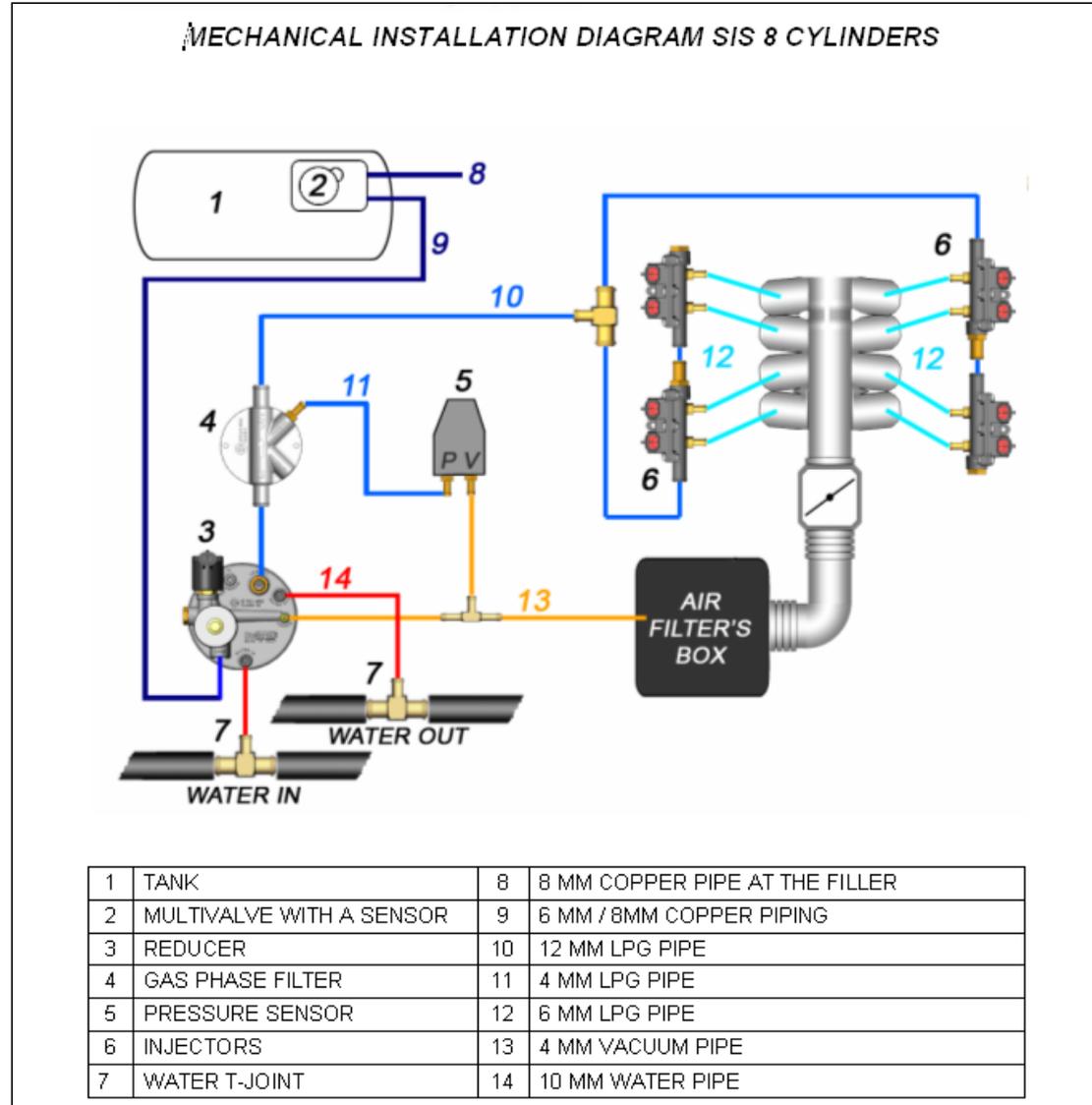
2. SYSTEM INSTALLATION SIS 8 CYLINDERS

**PETROL SYSTEM
CONTROL**

**MECHANICAL
INSTALLATION
DIAGRAM**

**ELECTRICAL WIRING
DIAGRAM**

**CALIBRATION AND
TUNING**



2. SYSTEM INSTALLATION

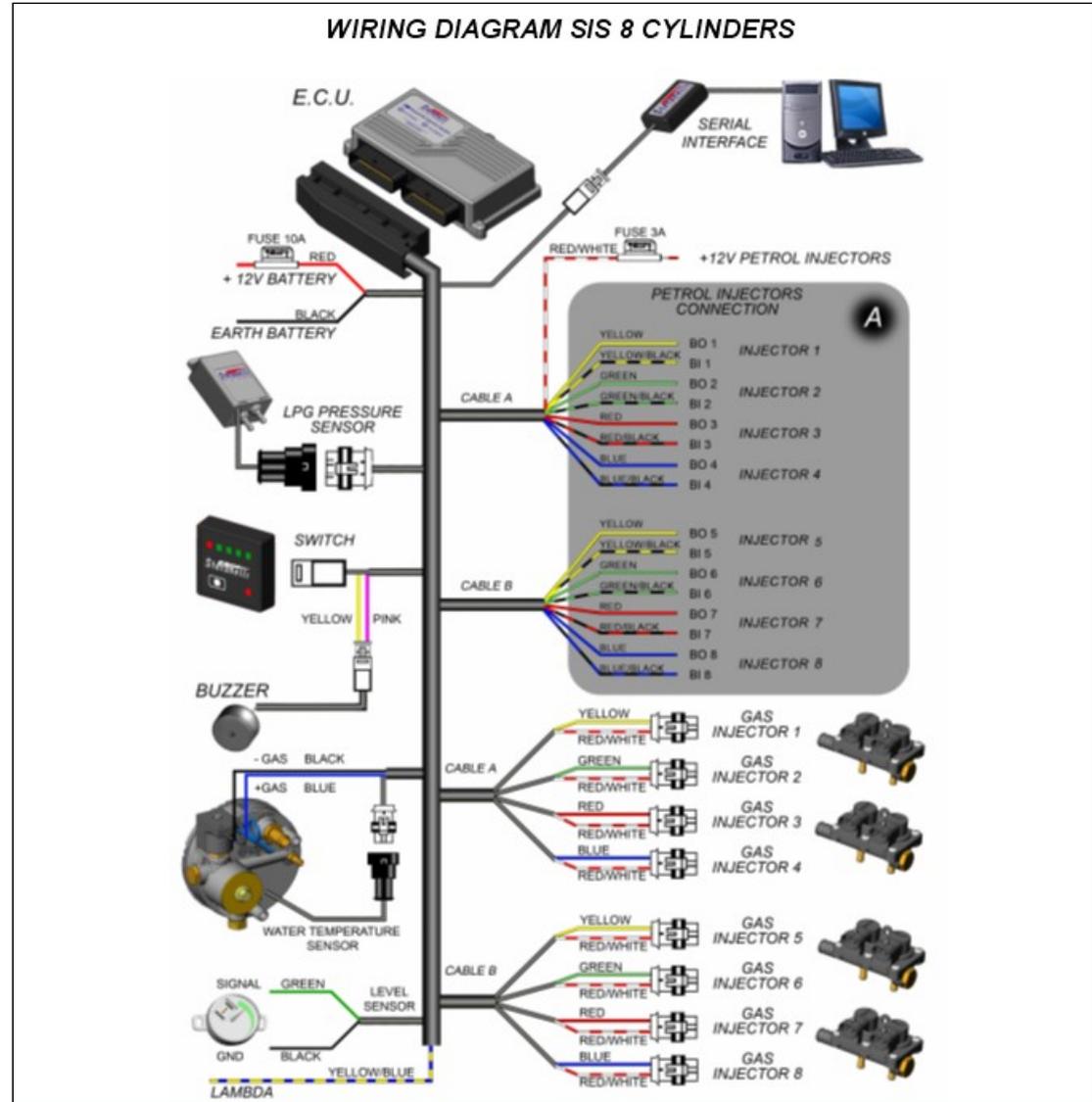
SIS 8 CYLINDERS

PETROL SYSTEM CONTROL

MECHANICAL INSTALLATION DIAGRAM

ELECTRICAL WIRING DIAGRAM

CALIBRATION AND TUNING



2. SYSTEM INSTALLATION

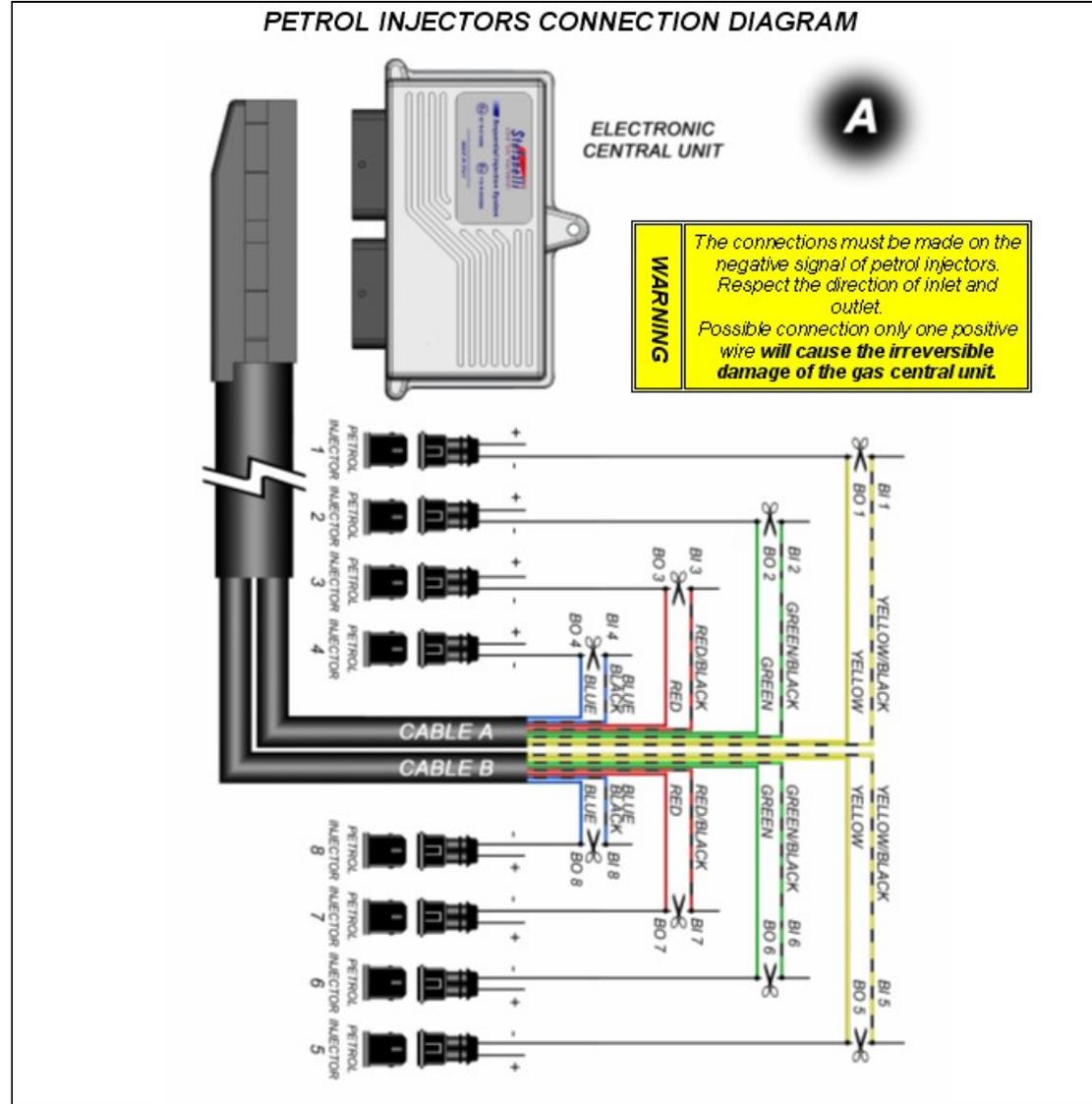
SIS 8 CYLINDERS

PETROL SYSTEM CONTROL

MECHANICAL INSTALLATION DIAGRAM

ELECTRICAL WIRING DIAGRAM

CALIBRATION AND TUNING



2. SYSTEM INSTALLATION

PROGRAM START-UP

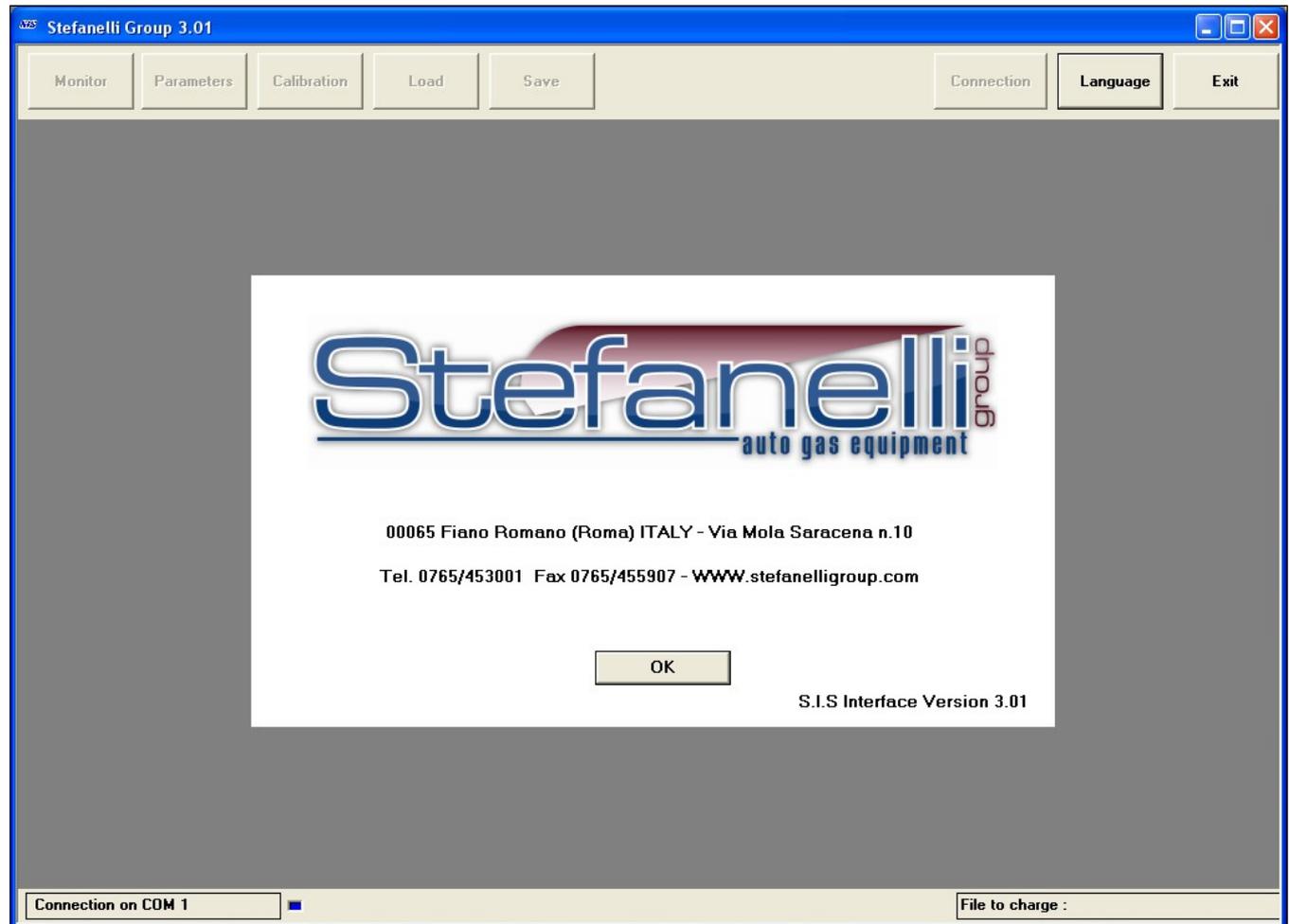
Double-click on the program icon

**PETROL SYSTEM
CONTROL**

**MECHANICAL
INSTALLATION
DIAGRAM**

**ELECTRICAL WIRING
DIAGRAM**

**CALIBRATION
AND TUNING**



2. SYSTEM INSTALLATION

LANGUAGE SELECTION

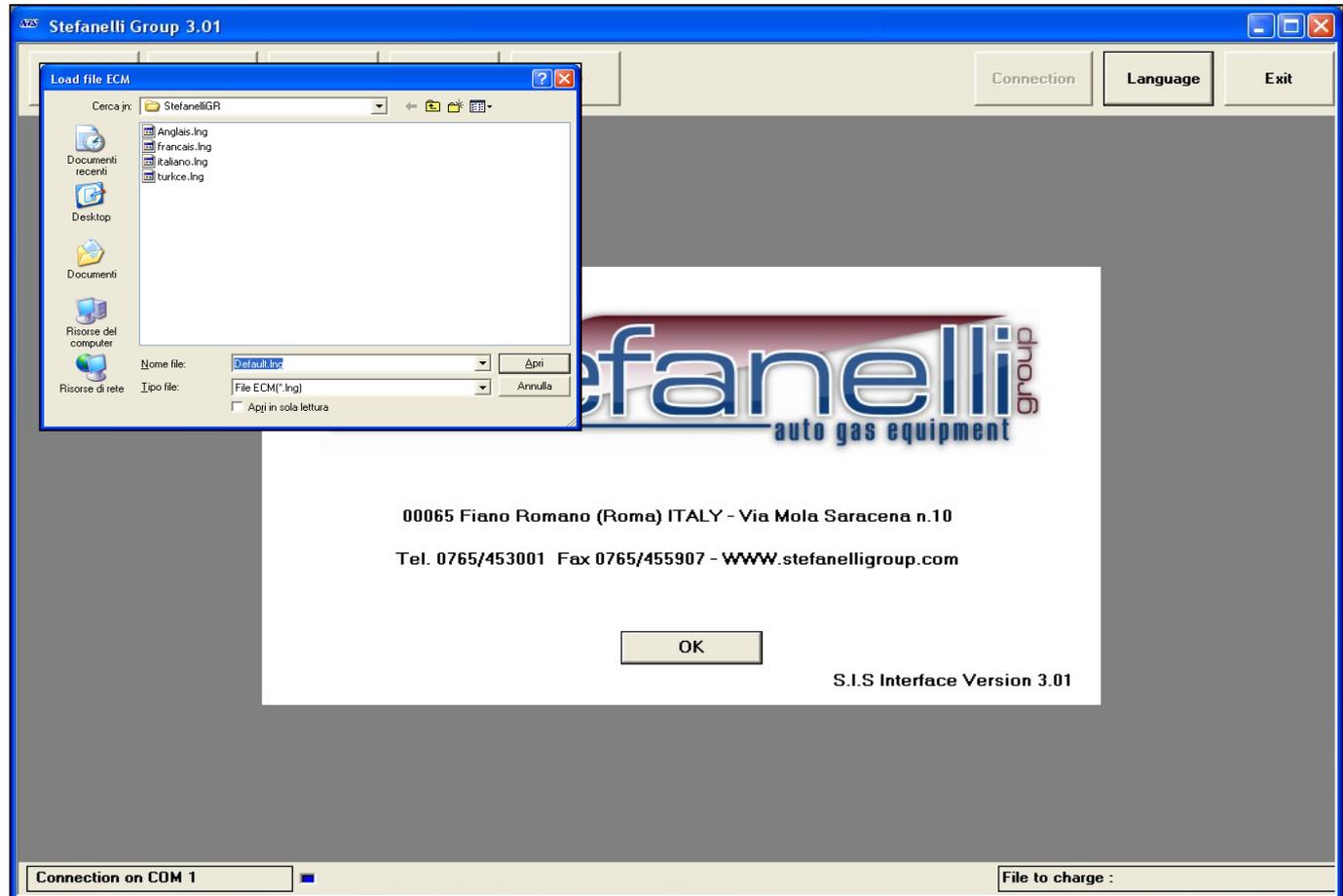
**PETROL SYSTEM
CONTROL**

*Click on the “LANGUAGE” button to select the desired language.
This operation needs to be carried out only once.
Select the desired language in the new window and click on “OPEN”.*

**MECHANICAL
INSTALLATION
DIAGRAM**

**ELECTRICAL WIRING
DIAGRAM**

**CALIBRATION
AND TUNING**



2. SYSTEM INSTALLATION

CONNECTION SELECTION

**PETROL SYSTEM
CONTROL**

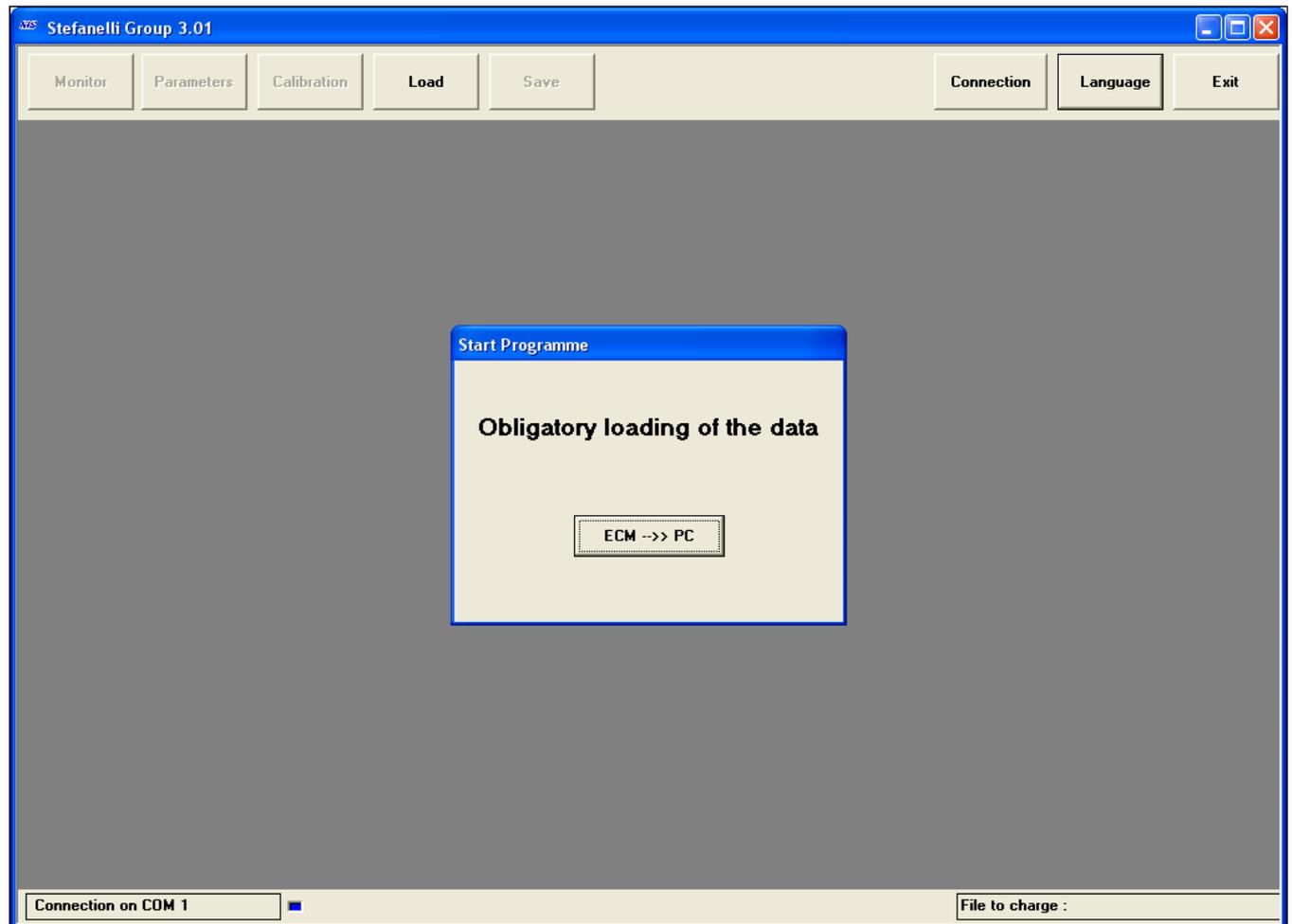
Click on the “CONNECTION” button to select the desired type of connection.

This operation needs to be carried out only once.

**MECHANICAL
INSTALLATION
DIAGRAM**

**ELECTRICAL WIRING
DIAGRAM**

**CALIBRATION
AND TUNING**



2. SYSTEM INSTALLATION

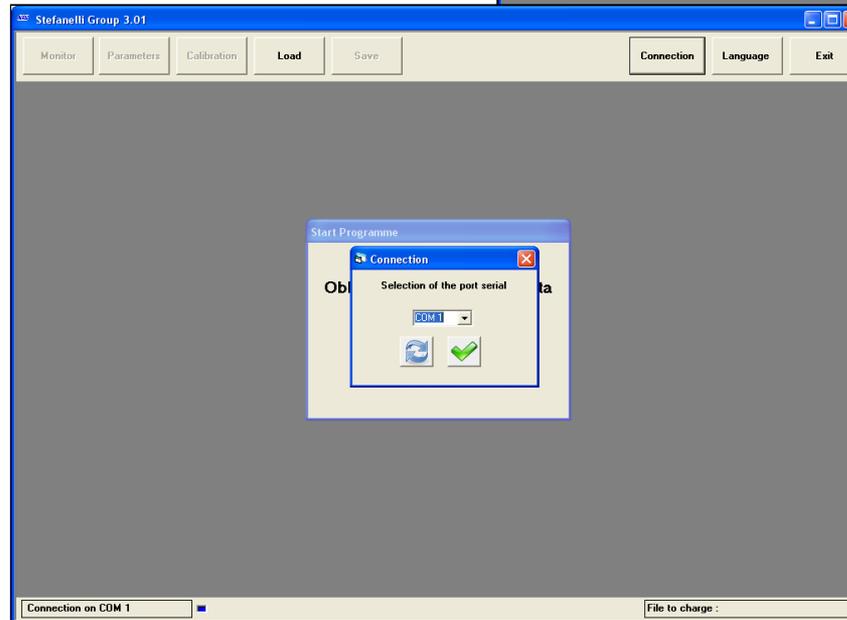
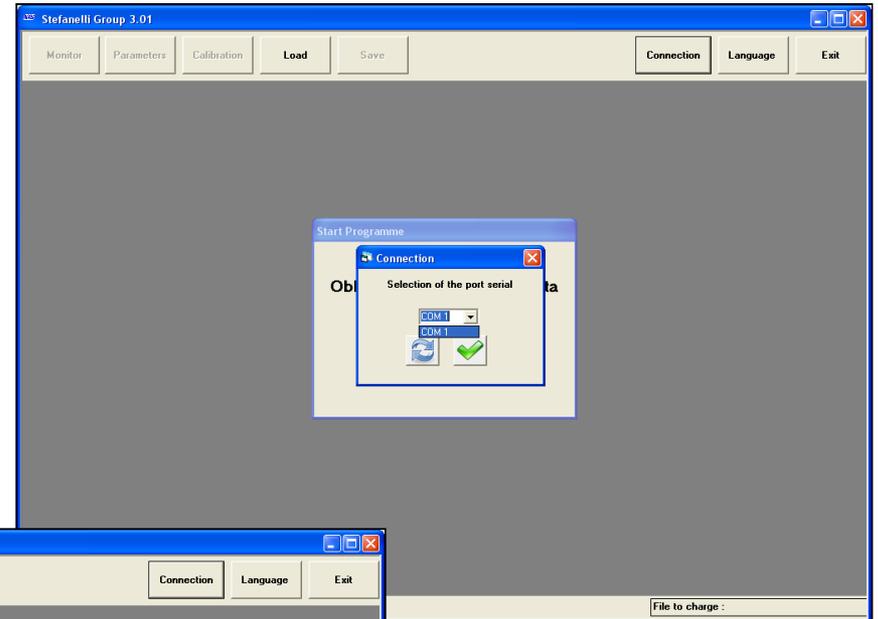
**PETROL SYSTEM
CONTROL**

**MECHANICAL
INSTALLATION
DIAGRAM**

**ELECTRICAL WIRING
DIAGRAM**

**CALIBRATION
AND TUNING**

Open the pull-down menu to select the "COM" port (in the example it is "COM 12" port).



Click the green "tick" to confirm.

2. SYSTEM INSTALLATION

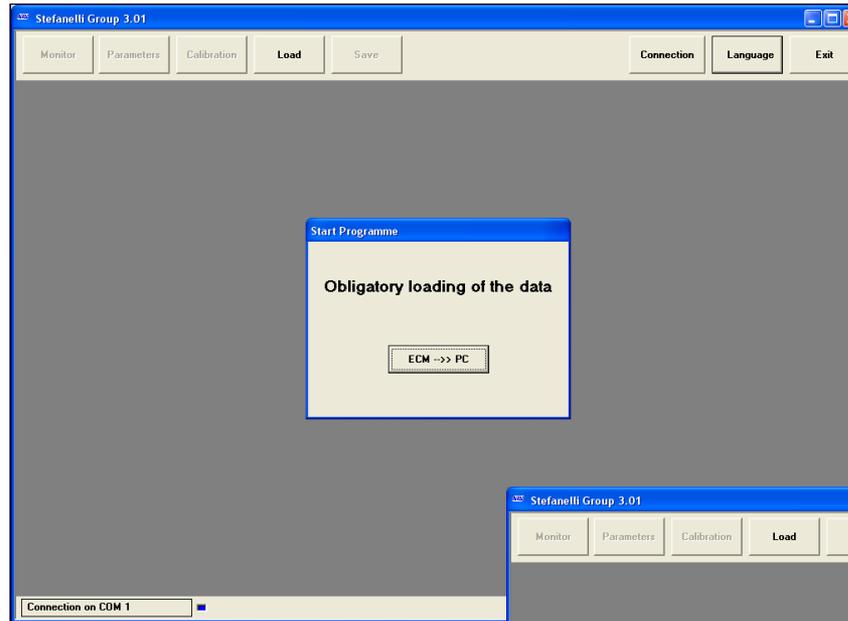
LOAD THE ECU DATA ONTO THE PC

**PETROL SYSTEM
CONTROL**

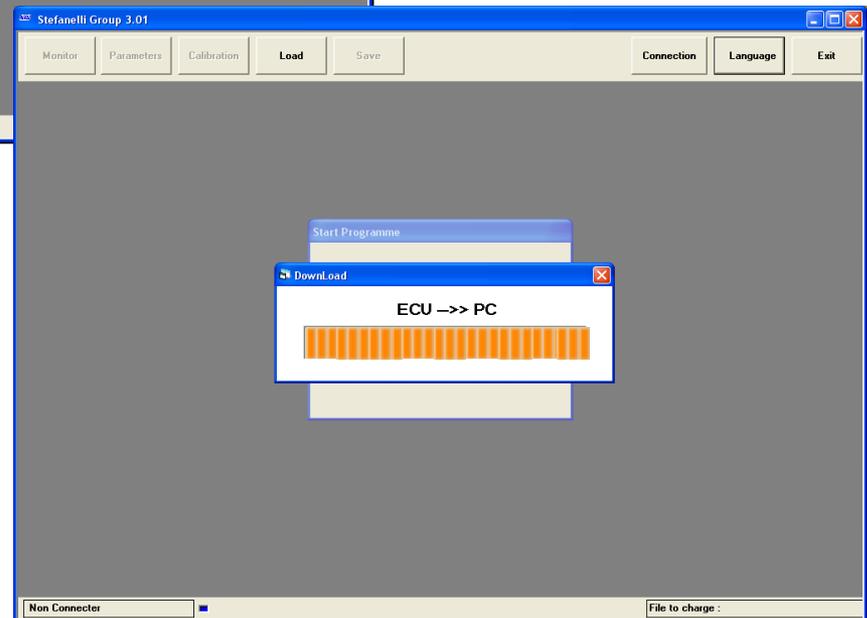
**MECHANICAL
INSTALLATION
DIAGRAM**

**ELECTRICAL WIRING
DIAGRAM**

**CALIBRATION
AND TUNING**



Click on the “ECU ->> PC” button to load the ECU data onto the PC.



2. SYSTEM INSTALLATION

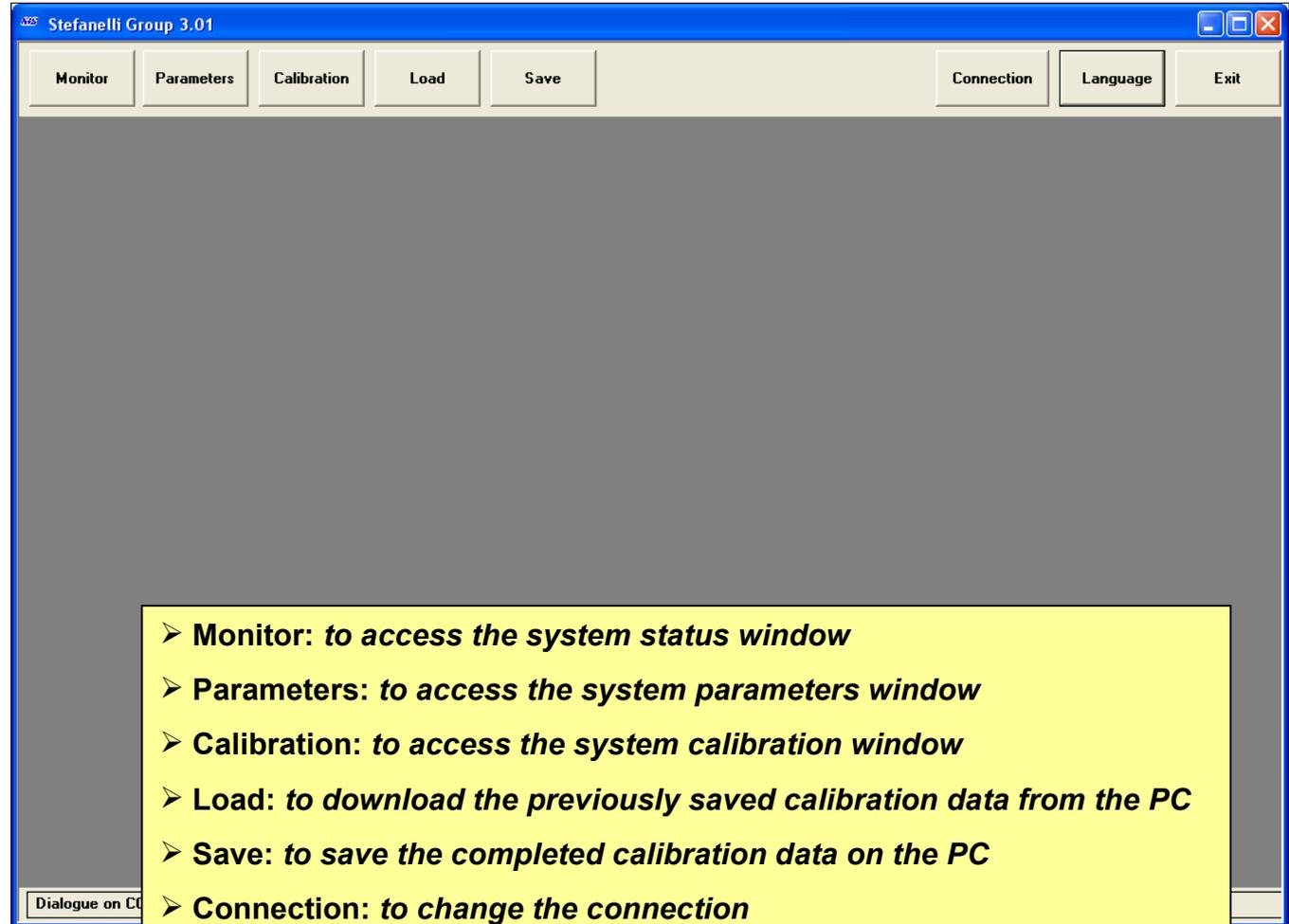
MAIN WINDOW

**PETROL SYSTEM
CONTROL**

**MECHANICAL
INSTALLATION
DIAGRAM**

**ELECTRICAL WIRING
DIAGRAM**

**CALIBRATION
AND TUNING**



2. SYSTEM INSTALLATION

MONITOR

This window monitors the system status

PETROL SYSTEM CONTROL

MECHANICAL INSTALLATION DIAGRAM

ELECTRICAL WIRING DIAGRAM

CALIBRATION AND TUNING

Stefanelli Group 3.01

Monitor Parameters Calibration Load Save Connection Language Exit

Monitor

Status Operation
Gas
SWITCH

Alarms
Temperature Alarm
Pressure Alarm
Start Gas
Reset Alarms

Injection Times

| | IDLE | CHARGE |
|---|------|--------|
| 1 | 7.07 | 7.07 |
| 2 | 7.07 | 7.07 |
| 3 | 7.08 | 7.07 |
| 4 | 7.07 | 7.07 |

Sensors
Lambda 0 0 1V
Extra TI 0

PC --> ECM
ECM firmware : 40

Dialogue on COM10 File to charge : ECM

2. SYSTEM INSTALLATION

PARAMETERS

In this window it is possible to set the changeover and alarm parameters

**PETROL SYSTEM
CONTROL**

**MECHANICAL
INSTALLATION
DIAGRAM**

**ELECTRICAL WIRING
DIAGRAM**

**CALIBRATION
AND TUNING**

Stefanelli Group 3.01

Monitor Parameters Calibration Load Save Connection Language Exit

Parameters

Switch over

Temperature 0°C - 40 + 100°C

Pressure -1 bar - 0.5 + 2.5 bar

Delay before switch over 0 (s) - 10 + 120 (s)

Fuel overlapping 0 ms - 0 + 1000ms

Way of switch over Directe

R P M - 4000 +

Sensors

Lambda Type 0 - 1V Injection type Sequentielle

Alarms - Check

Temperature -20°C - 5 + 100°C

Pressure 0 bar - 0.45 + 2.5 bar

Pressure delay Control 0 (s) - 5 + 120 (s)

Reset

Reset ECU

Download

PC ->> ECU ECU ->> PC Next >>

Dialogue on COM10 File to charge : ECM

2. SYSTEM INSTALLATION

PARAMETERS >> NEXT

Level sensor calibration window

**PETROL SYSTEM
CONTROL**

**MECHANICAL
INSTALLATION
DIAGRAM**

**ELECTRICAL WIRING
DIAGRAM**

**CALIBRATION
AND TUNING**

The screenshot shows the 'Stefanelli Group 3.01' software interface. At the top, there are navigation buttons: Monitor, Parameters (selected), Calibration, Load, Save, Connection, Language, and Exit. The main area is titled 'Parameters' and contains a 'Level sensor' calibration window. This window has several input fields and a 'Values' table. The 'Minimum value' is set to 0 and 'Maximum value' to 255. The 'immediate value' is 140 (45.09%) and the 'Average value' is 92 (63.92%). The 'Values' table has five rows with corresponding color-coded bars: 1 (75, dark green), 3/4 (55, green), 1/2 (40, bright green), and 1/4 (20, dark red). To the right, a 'Default' section contains buttons for '0 - 90 Ohms Livello', '0 - 90 Ohms AEB', '10 - 50 AEB', 'Charger', and 'Sauvegarder'. At the bottom, there are 'Download' buttons for 'PC --> ECM' and 'ECM --> PC', a '<< Previous' button, and a status bar showing 'Dialogue on COM10' and 'File to charge : ECM'.

| Label | Value | Percentage |
|-----------------|-------|------------|
| Minimum value | 0 | |
| Maximum value | 255 | |
| immediate value | 140 | 45.09% |
| Average value | 92 | 63.92% |

| Label | Value | Color |
|-------|-------|--------------|
| 1 | 75 | Dark Green |
| 3 / 4 | 55 | Green |
| 1 / 2 | 40 | Bright Green |
| 1 / 4 | 20 | Dark Red |

2. SYSTEM INSTALLATION

CALIBRATION

System calibration window

**PETROL SYSTEM
CONTROL**

**MECHANICAL
INSTALLATION
DIAGRAM**

**ELECTRICAL WIRING
DIAGRAM**

**CALIBRATION
AND TUNING**

The screenshot shows the 'Stefanelli Group 3.01' software interface. The 'Calibration' window is active, displaying two sensor calibration sections (I and II) with 'Idle' and 'Charge' values and corresponding bar graphs. A 'PC --> ECM' button is visible. Below the sensors, system parameters are shown: Vapouriser Temperature (85 °C), Gas Pressure (0.65 bar), Lambda (0), and RPM (2208). A 'Status Sytem' section shows 'Gas' selected. At the bottom, a sequence of buttons is shown: 'Start Calibration idle', 'Upload ECM', and 'Stop Calibration'. The status bar at the bottom indicates 'Dialogue on COM10' and 'File to charge : ECM'.

2. SYSTEM INSTALLATION

PETROL SYSTEM CONTROL

1. Lambda type and injection type selection

2. Reducer pressure calibration

3. Calibration of the “IDLE” parameter

MECHANICAL INSTALLATION DIAGRAM

4. Calibration of the “CHARGE” parameter

5. Calibration of the “IDLE” parameter

ELECTRICAL WIRING DIAGRAM

6. LPG pressure control while under load

7. Changeover and alarm parameters calibration

CALIBRATION AND TUNING

8. TI Excl operation

8. Level sensor calibration



3. SERVICING

| INTERVENTION | AFTER 1.500 KM | EVERY 20.000 KM | EVERY 100.000 KM |
|--|-------------------|--------------------|---------------------|
| HIGH AND LOW PRESSURE CIRCUIT TIGHTNESS CONTROL | ✓ | | |
| PETROL AND LPG PARAMETERS CONTROL | ✓ | ✓ | ✓ |
| SPARK PLUGS AND AIR FILTER CONTROL | | ✓ | ✓ |
| LIQUID PHASE LPG FILTER CHANGE | | ✓ | |
| GASEOUS PHASE LPG FILTER CHANGE | | ✓ | ✓ |
| LPG ELECTRO-INJECTORS SERVICE | | | ✓ |
| REDUCER SERVICE | | | ✓ |





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