



Fitting instructions manual

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1 INTRODUCTION

FLYJET is a sequential injection gas conversion system designed to fuel motor vehicles with natural gas. It can be used for both “full group” and “phased” systems. The electric injector control, whether single or multiple, is automatically determined by FLYJET during the adjustment phase. FLYJET is the most modern and technologically advanced system available on the market today.

Easy to install, without altering or interfering with original diagnosis systems fitted to new-generation vehicles, it is also easy to set thanks to simple and intuitive adjustment software that guides the operator step by step through the various system setting-up stages.

If required, FLYJET can be easily updated thanks to dedicated software available on line from www.autogasitalia.it

2 COMPONENT PARTS AND THEIR INSTALLATION

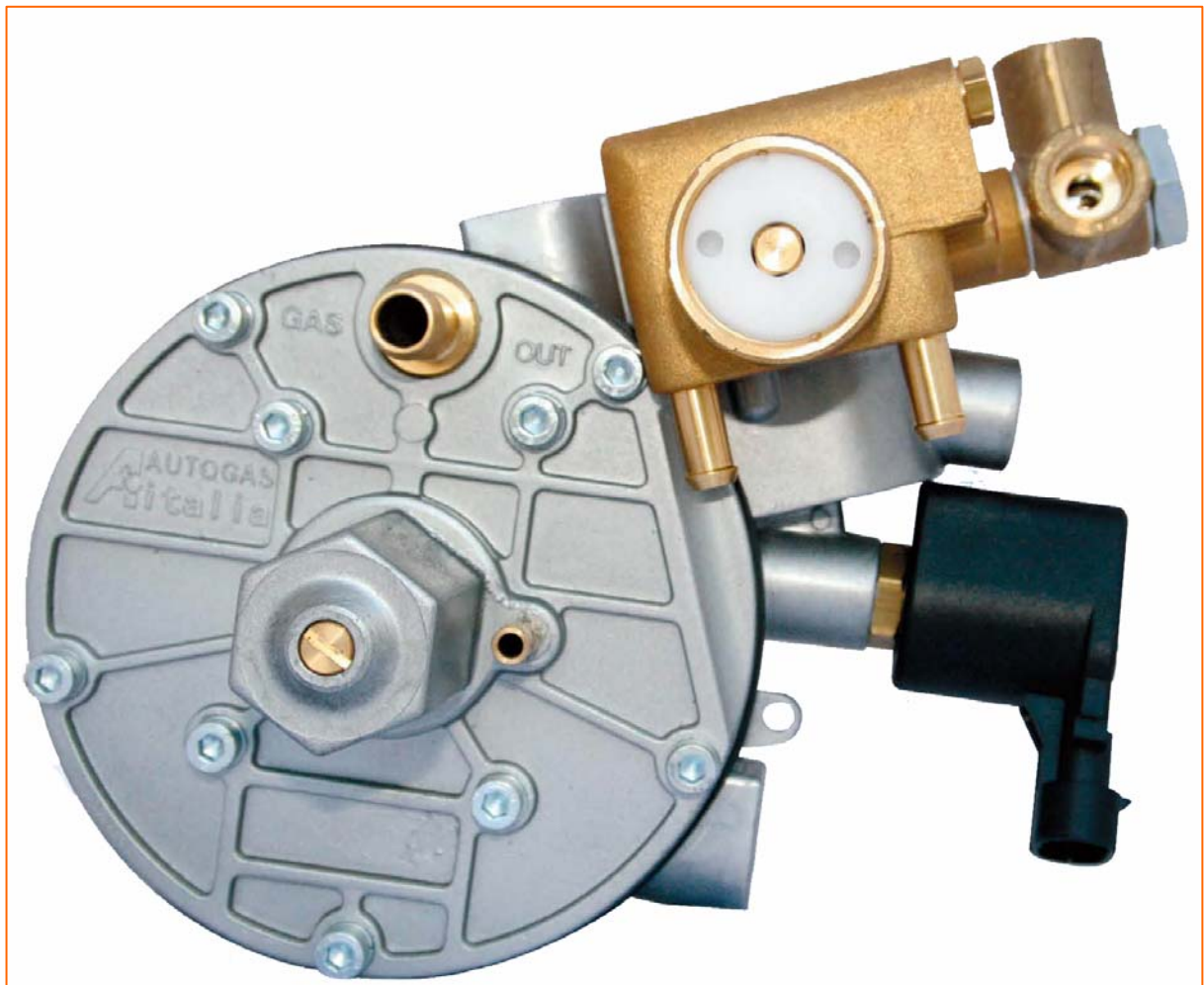
PRESSURE REDUCER

The pressure reducer (image 1) reduces the gas pressure in order to satisfy the right working process. The two plastic CNG water connection allows to connect the reducer to the engine cooling circuit.

The register in the middle of the CNG reducer could change the working pressure of the reducer.

The solenoid valve is connected to the positive and negative ECU wires. The temperature sensor is connected to the hole present on top of the CNG reducer.

On the top of the CNG reducer it is present a filter to eliminate all the impurities coming from the CNG tank.





Suggestions for correct installation

Never secure the reduction unit to the engine, but always to rigid parts of the bodywork. Long brackets can be used considering the modest weight and overall dimensions of the appliance.

If it were secured to the engine, correct operations would be impeded by the vibrations.

Do not position close to the exhaust manifold, the catalyser or other heat sources.
Do not position close to electrical parts such as coils, plugs or other power parts.

Do not install the reducer in a position higher than radiator. Pay attention to connect the vacuum pipe between manifold and cng reducer.

Do not position on the partition dividing the cab from the engine compartment so as to prevent any vibrations becoming a nuisance during driving.

Secure the reduction unit in vertical position with the solenoid valve coil and identification symbols turned upwards.

Check the exit and conpicuration of the injector supply pipes, making sure there are no obstacles in their way or that they are not in contact with direct heat sources.

INSTALLATION

IMPORTANT:

- NEVER USE THE PIPE INTENDED FOR RECOVERY OF OILY VAPOURS!
- NEVER CONNECT THE VACUUM INTAKE ON ONE CYLINDER ONLY!

The solenoid valve chamber can be turned to position the gas inlet connection in the most convenient location for the operator. During this operation, be very careful to properly reposition the chamber filter.

AFTER COMPLETING THE VARIOUS OPERATIONS, MAKE SURE THE CONNECTIONS ARE NOT LEAKING AFTER PLACING GAS IN THE TANK.
CHECK TIGHTNESS OF THE VARIOUS CLAMPS!

RAIL ELECTRIC INJECTORS

The “**RAILJET**” electric injectors are a fundamental part of the system, being the most delicate and stressed in terms of operating speeds and materials (e.g., resistance to solid impurities).

The RAILJET can be fitted directly on the induction manifold in the immediate vicinity of the cylinders (recommended position) by means of a suitable fastening/locking system.

The RAILJET could be installed in both orizontal and vertical position.

BEWARE: Never install it in vertical position with coil on the bottom!! The speed working it should be not good.



Pic.2

Suggestions for correct installation

Once installation has been completed, proceed to connect the gas injector to the relevant petrol injector. Disconnect the original pins from the petrol injectors and find the wire that carries the control signal.

Cut the control wire of the electric petrol injectors and connect up the **FLYJET** wires.

Each gas injector rail has a number to join it with the same petrol injector number.

On the petrol injector wiring there is a similar number, so the gas injector number 1 has to be connected with the petrol injector number 1 etc.....

BEWARE: Do not connect the first cylinder but the petrol injector with the numer 1 wire! Etc....

The wires should be soldered together to prevent false contacts or detachments. The FLYJET cable injectors, with the black stripe, must always be connected to the petrol unit.

After completing the installation, check the connectors and make sure the power leads are protected.

The RAILJET is connected to the nozzle fixed on the manifold through a dedicated gas pipe.

The length it must be as short as possible! We advice to keep it not longer than 15 centimeters.

The “**RAILJET**” is equipped with dedicated raccords, with different diameters, suitable for various car displacements. (check the data-sheet injectors)



Pic. 3

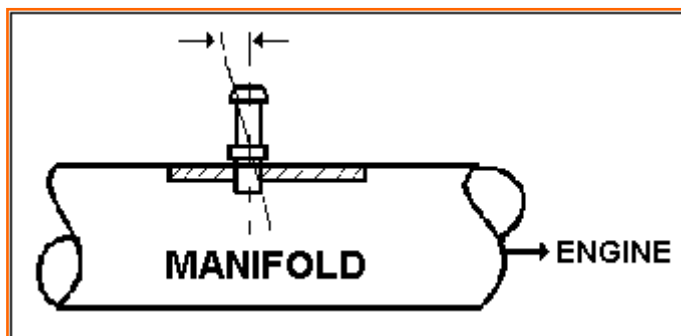
NOZZLE FOR MANIFOLD

Fix the nozzle near the petrol injectors. We advice to not bypass a distance of 10 cm from the original petrol injectors. Before to make a hole, we advice to check the sloping of the nozzle (see the below pic).

Please use a drill of mm5 and after to thread with a 6x1.



Pic. 4



Pic. 5

FILTER



pic. 7

Fix the filter between reducer and injectors rail.

CNG PRESSURE SENSOR (MANOMETER)



pic. 8

Fix the cng pressure sensor on the cng pressure reducer.

ELECTRONIC UNIT

The electronic unit is installed in the engine compartment. Through two connectors the wiring is easily hook.

FLYJET electronic unit is composed with:

- ▶ **Sequential injection unit FLYJET**
- ▶ **Wiring**

The components has to be installed as shown in the WIRING DIAGRAM

SEQUENTIAL INJECTION UNIT FLYJET

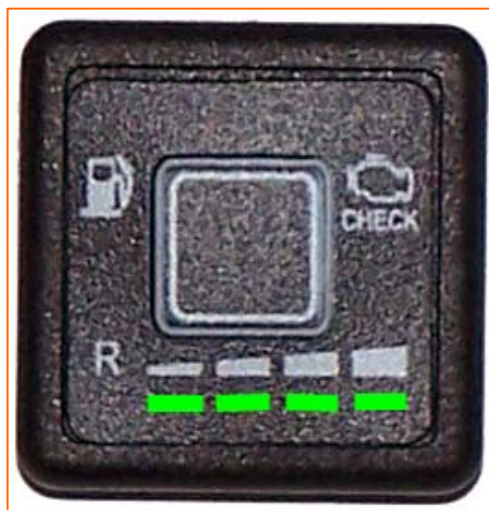


pic. 9

Fix the electronic unit to the body inside the hood. Following:

- ▶ It shall be fixed to the body and not to the engine.
- ▶ It shall be placed far from the exhaust manifold or excessive heat source.
- ▶ It shall be placed protected from collisions and accidental impacts.
- ▶ It shall be in a position where maintenance and inspections can be performed easily and the connection of the diagnosis and setup tools is accessible.
- ▶ It shall be in a position protected from direct water impact.

SWITCH



pic. 10

The fuel selection switch is of compact size; it can be placed anywhere on the dashboard without any risk of creating obstacles or hindering driver movements. Simply drill a hole through which to pass the power leads and slot in the switch. Inside the gas tank is a fuel level indicator and in the event of forced switchover to petrol while running on gas, an acoustic device warns the driver of what has happened.

INSTRUCTION FOR SELECTING FUEL

Manual fuel selection.

The following sequences indicate the various switch stages.



- The vehicle is running on petrol.

By pressing the button, the type of fuel used can be changed.



- The vehicle is still running on petrol but is ready to switch to gas as soon as the vehicle achieves the right fuel-change conditions. **The green LEDs flash.**



- The vehicle has switched to gas and the indicator shows the fuel level inside the gas tank is at maximum allowed level.



- The vehicle has switched to gas and the indicator shows the fuel level inside the gas tank has dropped to 3/4 of max allowed capacity.



- The vehicle has switched to gas and the indicators shows the fuel level in the gas tank has dropped to 2/4 max allowed capacity.



- The vehicle has switched to gas and the indicator shows the fuel level in the gas tank has dropped to 1/4 max allowed capacity.



- The vehicle is running on gas and the indicator shows fuel reserve condition has been reached inside the gas tank. **The LED flashes.**

FINAL CONTROLS AND TESTS

The following tests and controls shall be performed once the installation is completed and prior the delivery of the vehicle:

- ▶ Feed the CNG system and check carefully for any gas leakage, using soap water or a gas detector. This control has to be done in any junction of the CNG line, both high pressure and low pressure, for each component of the conversion, including also the ones not mentioned in this booklet (i.e the multivalve, the tank and so on).
- ▶ Start the engine.
- ▶ Verify the cooling system/circuit and top it up, if needed.
- ▶ Verify the evaporator: it shall heat up correctly. If needed, bleed the cooling circuit in case a drain tap is placed on the engine.
- ▶ Check carefully for any water leakage, both in the WATER IN & OUT fittings of the evaporator or in any other junction of the water circuit.

Now it's possible to proceed to the calibration of the FLYJET , following the instructions of the dedicated manual.

3 CONNECTION DIAGRAM

