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Regulation 115 handbook Sequent systems

LPG - CNG user's handbook

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M.T.M. srl
TECHNICAL MANAGER
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TECHNICAL OFFICER

Vehicle and customer's data

Surname / Name / Company

Address

Postcode City

Vehicle trademark and type

cm3

Number plate or Chassis

1st registration year

LPG tank

LPG multivalve

LPG Solenoid Valve

LPG SEQUENT Lambda Control System / Batch / N°

FJ 1 HE Filter / Batch

Injectors type

⊗ BRC

⊗ KEIHIN

batch 1° | | | - 2° | | | - 3° | | | - 4° | | | - 5° | | | - 6° | | | - 7° | | | - 8° | | |

BRC reducer type / Batch / N°

Kind of control ECU

Other devices installed

N of km and installation date

Workshop stamp and signature

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Introduction

We congratulate you on installing a “BRC Gas Equipment” system that, we are sure, will meet your expectations and will assure many years of pleasant driving respecting the environment.

M.T.M. Srl, situated in Cherasco (CN) and owner of the BRC Gas Equipment trademark, has been producing **LPG and CNG** conversion systems for vehicles with petrol supply for nearly 25 years, and it holds now a worldwide leadership in this field.

The range of products necessary for converting any kind of vehicle includes tanks, reducers, LPG and CNG valves, mixers, ECUs and specific electronic components, all complying with the European or national laws in force (**E67-01, R110, DGM**, etc.) and with the CE directives about polluting emissions (**EuroIII and EuroIV**) and Electromagnetic Compatibility. Every product is the result of long-years research, experimentations and development, completely carry out inside the company; among the most important products, we want to remember the LPG or CNG sequential injection systems in gaseous phase of “Sequent” family.

CAD-CAM systems are used to design and develop every single component. Production departments are characterised by a high automation and recourse to N/C machines. The Quality Department manages the production process, assuring the full observance of **UNI EN ISO 9001:2000** regulations.

BRC Gas Equipment cooperates with the most important European and extra-European car-builders, and it's member of some big international associations playing a vital role in research and development of new solutions related to use and standardisation of components for LPG and CNG conversion in the automotive field.

M.T.M. Srl thanks you for taking the wise decision to use LPG as fuel for your car, and to choose one of the several “BRC Gas Equipment” authorised workshops, being BRC synonym of Quality, Saving, Safety and cutting-edge Technology.

Please read carefully this booklet before driving your car, it contains all information related to the LPG system installed on your vehicle and some important warnings we ask you to follow to enjoy longer travels with the lowest expenses, the highest working safety and the most comfortable driving.

Have a nice journey with BRC Gas Equipment!

Sequential is an innovative equipment in comparison with the ones today on the market. Actually, it's an LPG sequential injection system with electronic management. Every component can interact perfectly tuned with vehicle general electronic, communicating so, at the same time and safely, with the different peripheral systems concerning running dynamic, such as l'ESP, l'ASR, l'ABS and so on.

System sophisticated technology allows obtaining high-level performances, that were unexpected until today; the running of the car and the pleasure of driving stay practically the same, to the point that driver doesn't perceive running with LPG.

SAFETY

In this kind of LPG systems some little injection nozzles, situated near the intake valves, supply gaseous fuel to the engine. This is the reason why there's no gas into the manifold and into any other intake equipment pipes.

Performances take advantage of the fact that combustion can absolutely not spread into the ducts.

Moreover, an injection system doesn't influence the vehicle petrol working at all, because gas system components don't interfere with the petrol supply system of the car.

LPG TANK / CNG CYLINDERS

Tank/cylinder is the biggest and heaviest additional element, and it's installed in the rear side of the vehicle, strongly fixed to the car body.

LPG: if ring-shaped, it's housed in the spare wheel compartment, while if cylindrical, it's housed in the luggage compartment against the back seats, or parallel to the running direction.

It's made of heat-treated HT steel and is tested up to 30 bar pressures, that's to say over the normal working pressure ranging from 2 to 15 bar.

Every tank is submitted to hard tests provided for Regulation ECE/ONU 67/R01. Moreover, in order to increase safety, the law orders the 80% filling limitation.

CNG: the seamless single-piece cylinders are tested at a pressure more than twice the working one. CNG cylinders amply conform to the stringent international laws about crash-testing and flash point standards.

Actually, cylinders are submitted to hard tests, both during homologation and during all their life. Special sturdiness needed to

Equipment characteristics and main components

face 300 bar test pressures and 220 bar working pressures give to the cylinders a strong resistance to the pushes.

TANK / CYLINDER VALVE

LPG: situated on the tank, multivalve manages many functions, such as: refuelling, filling limitation, level indication, LPG taking with shut-off solenoid valve, safety valve and excess flow.

CNG: every single CNG cylinder is equipped with a special valve performing different functions. First of all, it allows the cylinder closing, separating its contents from the rest of the equipment. Cylinder valve also carries out a breather function, in case of accidental overpressures. As a good rule, it's better to turn off the tap situated on the cylinders before starting any operation or in case of accident.

REFUELLING POINT

LPG: refuelling point, equipped with a non-return valve, is outside the vehicle, in a protected and hidden position, on the rear bumper or near the petrol filler inside the fuel little door. In the former case, to refuelling the car, you have to simply unscrew the cap and connect the gun, while in the latter one it may be necessary to screw the suitable gun adapter.

CNG: it is a normal non-return valve having refuelling function. In accordance with the different National Regulations, this valve can be installed into the engine compartment, the back mudguard or the petrol filler door and you can recognize it thanks to a protection cap or to a screw cap. As a good rule, it's better to check the refuelling point cap closing, to avoid possible impurities might compromise its right working.

SOLENOID VALVE

Housed in the engine compartment, it's the device that allows the automatic opening and closing of the gas flow from the tank to the engine. It can be provided with a filter for impurities that ought to be periodically replaced. It carries out several safety functions, such as gas flow closing in case of engine accidental switching off, even with key contact switched on.

REDUCER

It is an important device situated in the engine compartment.

LPG: LPG reducers-vaporizers allow reducing pressure to the working values, and provide the heat exchange necessary for the complete LPG evaporation.

CNG: CNG reducers allow reducing pressure to the optimal working values. CNG is in gaseous state, so it doesn't need to be vaporized.

FILTER

It has the important task to retain any gas impurity (oils, waxes, etc.) preserving the injectors working. In the LPG systems, it's situated downstream the reducer-vaporizer, and in the CNG ones, at the reducer inlet. A regular maintenance of the cartridge filter is very important to its right working.

RAIL AND INJECTORS

We called "Rail" the element on which gas injectors are housed. It allows the uniform distribution of gas fuel to all injectors. Injector is an electronic injector to all intents and purposes, with the task to supply precise dosed gas quantity under pressure, and inject it in the intake manifold. A pressure and temperature sensor, situated on the Rail or near it, provides to the ECU all information necessary for managing flow and for automatic petrol-gas changeover.

ELECTRONIC CONTROL UNIT (ECU)

It is the brain of the whole system and allows performing different kinds of operations, in accordance with the equipment installed: from the simple changeover to some sophisticated carburation controls, from the diagnostic to the emission control, and so on. All ECUs are equipped with the "Safety-Car" function that, in case of engine accidental switching off, even with key contact being on, closes solenoid valves, in order to prevent any possible gas leakage.

CHANGEOVER SWITCH

It allows choosing between two kind of vehicle powering mode: LPG mode (starting up in petrol mode and automatic changeover to LPG) or petrol mode. See paragraph "Instructions – starting up and changeover" for its working.

Equipment characteristics and main components**SOFTWARE FOR CONSUMPTION OPTIMISATION**

Equipment installed on your vehicle has a logic of automatic changeover allowing optimizing gas consumption up to the total tank exhaustion. Without this function, a loss in performances could happen, before the fuel total exhaustion.

Software installed allows fully exploiting gas contained in the tank/cylinder.

Changeover from gas to petrol (besides the manual one) happens automatically both if we require high power to the engine, and if fuel ends.

Hereunder, you'll find some useful advices for saving on management costs and reducing noxious emissions, keeping equipment and vehicle efficient and safe.

SYSTEM PERFORMANCES

BRC gas systems right working is assured if LPG used is the one compliant with European Norm "EN589". Performances (power, speed, pick-up, consumption) are a little bit lower if compared with petrol mode.

WARNING

Remember that using LPG/CNG as fuel, autonomy changes a lot because it depends both on vehicle driving condition and maintenance, and on the different gas composition, that can change from season to season, but from filling to filling too.

VEHICLE MAINTENANCE

Besides the traditional care for your vehicle and controls indicated in the manufacturer's "Use and Maintenance" booklet, that any workshop can easily carry out, your LPG equipment ought to be submitted to maintenance in the "BRC Gas Equipment" authorised workshop that installed it.

Preventive maintenance of gas system components has a vital important for its good right working. Products' ageing is a gradual process but, by doing some simple scheduled maintenance checks, you could keep low costs and high safety on your vehicle.

In order to know when gas system ought to be submitted to maintenance, please make reference to the paragraph "Maintenance schedule".

ENGINE STARTING AND WARMING UP

Short distances and too many cold starting up don't allow the engine reaching the working optimal temperature. So consumptions increase (from 15 up to 30% on urban cycle), and noxious emission too.

Advices and warnings

Above all, during the first kilometres run with cold engine, it's better:

- run slowly, keeping medium engine condition and avoiding sudden accelerations;
- don't ask for the highest performances, but rather wait until engine coolant liquid temperature reaches 50-60°C.

ENGINE SWITCHING OFF

Before switching off the engine, loose accelerator, and wait until engine reach idle condition.

NOTE: After a hard distance covered, before switching off the engine, we suggest to let it “take a breath”, running at idle, in order to make engine temperature decreasing.

TYRES

Tyres with too low pressure provoke the consumptions and emissions increasing. We want to underline that this condition also increases tyres wear, and worsens vehicle behaviour and safety on the road.

LUGGAGE RACK/SKI RACK

Using luggage/ski racks and/or placing luggage on the vehicle sunroof increases consumptions, because it reduces aerodynamic penetration.

ELECTRIC DEVICES

Use electric devices only for the time strictly necessary, because fuel consumption increases if system requires more current.

AIR CONDITIONER

The air conditioner working directly influences the engine one, increasing its consumptions (normally up to 20%).

DRIVING STYLE

Your driving style influences consumptions and emissions; above all we suggest to:

- warm engine up while running, following indication previously described;

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- avoid pushes on the accelerator with vehicle stopped or before switching off the engine;
 - avoid the so-called “double declutching” while changing gear (for today’s engines, it’s a useless operation);
 - keep a uniform speed, avoiding any unnecessary braking or pick-up. We suggest so adopting a “soft” driving style, trying to anticipate manoeuvring for sudden dangers and respect safety distances in order to avoid sudden slowing down.

MAXIMUM SPEED

Fuel consumption increases a lot if speed increases, and it’s useful note that passing from 90 to 120 km/h we have a consumption increasing of roughly 30%.

INTERVENTIONS INTO THE ENGINE COMPARTMENT

All interventions into the engine compartment need special caution! Always address to a BRC authorized workshop.

If it’s strictly necessary to intervene into the engine compartment, it’s useful to know that there’s a risk of lesions, burns, accidents and fires. So, the following general safety norms and warnings must be respected.

- Switch engine off and extract key from the ignition block.
- Pull handbrake and put gear lever in its neutral position (position P for automatic gear).
- Let the engine cooling.
- Keep children away from the engine compartment.
- Never pour working liquids on the hot engine. These liquids (e.g. coolant liquid) could catch fire!
- Avoid short-circuits on wiring equipment, especially on the battery.
- Never touch cap of the coolant liquid tank if engine is hot. Coolant system in under pressure!
- If you carry out tests with engine switched on, you have to consider also risks connected to the rotating components (e.g. belt, alternator, fan) and to the high-voltage ignition equipment.
- Follow these additional warnings, when you intervene on fuel supply systems (LPG and petrol) or on the wiring equipment:
 - Always disconnect battery from the board network.
 - Don’t smoke.

Advices and warnings

- Never work near free flames.
- Always keep a perfectly working extinguisher near to you.



WARNING - USE OF PAINTING BOOTHS AND DRYING OVENS

In case of furnace painting, tank must be removed from the vehicle and then reassembled by a BRC authorized workshop.

REFUELLING

LPG: refuelling point, equipped with a non-return valve, necessary for LPG refuelling, is generally situated in the vehicle rear side.

To refuel, it is necessary to unscrew the plastic protection cap (if existing) and connect the refuelling gun.

CNG: refuelling point, equipped with a non-return valve, necessary for CNG refuelling can be installed into the engine compartment, the back mudguard or the petrol filler door. To recharge CNG cylinders, it is necessary to remove the quick coupling protection on which the refuelling gun will be inserted. As soon as the refuelling flow stops, the non-return valve automatically come back in its closing position, obstructing so the body central hole and allowing the gun disconnection without any considerable gas leakage.

NOTE: Please also consult “CNG Cylinders Test” in the chapter “Useful references”

DIRECTIONS TO FOLLOW WHILE REFUELLING

You are recommended to follow directions and precautions suggested at the filling stations.

During the refuelling, it is necessary to follow some simple safety norms:

LPG-CNG: switch the engine off,

LPG-CNG: turn all board lights and radio equipment off,

CNG: get out of your car and go to the suitable station areas.

Authorised personnel generally carry out refuelling operation.

Remember that you cannot absolutely smoke in those areas.

STARTING UP AND CHANGEVER FOR INJECTION VEHICLES CONVERTED WITH “SEQUENT SYSTEMS”

Vehicles converted with injection systems in gaseous phase of Sequent family are equipped with a push-button changeover switch with acoustic indicator (Buzzer), on which a gas level indicator is integrated, consisting of 4 green LEDs.

Changeover called “push-push” is a single-position switch. Fuel change (gas or petrol) occurs every time the push-button is pressed.

ECU described on page 7 recognises and records the fuel state (gas or petrol) when you switch off the vehicle in order to

Instructions

repropose the same state at the next switching on.

A) PETROL MODE

The red round LED turned on informs user of this state; gas level information disappears, that's to say that the four green level LEDs are turned off.

B) GAS MODE

In this state, vehicle starts in petrol mode. Red round LED is on, and gas level LEDs are on in a number depending on the tank gas level. Vehicle changes automatically over to gas mode when program changeover settings are reached. The round LED, by becoming first orange and then green, informs user that changeover has been done.

C) GAS-PETROL AUTOMATIC CHANGEOVER

Sequent systems are able to recognize when it's not possible to supply the engine correctly, because of the end of gas or of the gas supply low pressure. In this situation, with switch in gas position, vehicle automatically changes over from gas to petrol (in this case vehicle can work in petrol mode for short periods). System can automatically come back to gas mode if it recognizes the possibility to supply engine correctly. Otherwise, if system realises it cannot supply engine with gas anymore, it informs user by means of a repetitive buzzing and of the switch red LED turned on. Buzzer can be switched off by putting the switch in petrol position. Now, it's necessary to refuel to obtain the vehicle normal gas working again.

D) ERROR INDICATION

In case of possible gas system working anomalies, systems informs user by turning on the two blinking green level LEDs in the middle, and by the round orange LED blinking too. In this situation, changeover switch doesn't work anymore, and ECU records the fuel mode you had before the error indication. If vehicle was in gas mode, the mode remains the same (idem for petrol mode).

If ECU recorded the gas mode, but meanwhile the fuel ends, passage to the petrol mode will be automatic and without any acoustic indication.

LEVEL GAUGE

Changeover switch also works as level gauge thanks to its LEDs. Normally, changeover switch has 4 green LEDs showing gas quantity inside the tank (4 LEDs=4/4, 3 LEDs=3/4, 2 LEDs=2/4, 1 LED=1/4). Fuel reserve indication is given by the first green LED blinking. We suggest to always use the partial odometer in order to control vehicle autonomy.

DIAGNOSTIC

System is equipped with a diagnostic system. Any signal and error recorded are reset by the BRC workshop on the occasion of scheduled maintenance car service.

WARNING

Avoid that LPG or petrol tank and CNG cylinders be completely empty.

It's necessary to always keep a petrol quantity corresponding to $\frac{1}{4}$ or $\frac{1}{2}$ of the tank and periodically refill it.

**WARNING - VEHICLES WITH ON BOARD COMPUTER**

On some vehicles, during the LPG mode, information about autonomy and consumptions given by the on board computer and by the petrol level indicator must not to be considered.

You can have the real petrol level only when you start the vehicle up. After the changeover to gas, you could perceive a petrol level decrease, proportionally to the kilometres made. After switching the vehicle off, and only after roughly 3 minutes, you can detect the real petrol level switching the vehicle up.

LPG TANK OVERHAULING

LPG tank must be replaced 10 years after its final test, as provided for the Land Transport Ministry's circular nr. B76/2000/MOT of 11.16.2000. Disassembly, reassembly and final test must be carried out by an authorized workshop. In case of overhauling failure, you could incur the Highway Code sanctions in force.

CNG CYLINDERS TEST

At the moment of the installation, vehicle is equipped with a plastic tag coloured in blue light-green of the G.F.B.M. (Italian acronym for CNG Cylinders Fund Administration), showing important data about cylinders installed on the vehicle, such as: its expiry date, vehicle chassis number and installer's stamp. Operator carrying out the refuelling must check cylinders validity according to the tag's information. If tag fails, operator can refuse to refuel the vehicle. Plastic tag is situated near the refuelling point. CNG cylinders must be submitted:

- every five years to the G.F.B.M. test, if homologated in accordance with the Italian laws (Law 7.06.1990 N. 145, D.P.R. 11.9.1991, n. 404).
- every four years to overhauling, if homologated in accordance with regulation ECE ONU R110 with procedures indicated in the Land Transport Ministry's circular (Prot. n. 3171_MOT2/C of 9.19.2005).

VEHICLE PERIODICAL OVERHAULING AT THE LAND TRANSPORT DEPT.

Every car, after its fourth year of life, must be submitted to overhauling. Then this operation will be made every two years. For vehicles with LPG or CNG supply, overhauling procedures stay the same and no special checks are provided for them, except the ones concerning tank or cylinders validity and exhaust gas emissions.

ITALIAN DISTRIBUTION NETWORK

Dealers' network amounts today to more than 2000 LPG stations and roughly 600 CNG stations, and it is growing a lot thanks to the strong interest of Institutions in Ecologic and Economic fuels. During these years, some promotions have been started in order to open new filling stations on all the national territory, especially along the motorways. For any further information, we suggest consulting our BRC Road Atlas of Italy.

PARKING

CNG vehicles are not submitted to restrictions concerning the underground parking. **LPG** vehicles, instead, must follow the MINISTRY of the INTERIOR's Decree of 22nd November 2002, saying that motor-vehicles supplied with Liquefied Petroleum Gases and equipped with safety systems in accordance with ECE/ONU 67-01 laws, can only park in the outside floors and in the first underground floor of garages, even if they're made up of more underground floors. Please ask BRC installer for further information.

EQUIPMENT DISASSEMBLY

Eventual disassembly must be carried out by a BRC authorised workshop. After this operation, vehicle must be submitted again to the Land Transport Dept. test.

GAS QUALITY

The fuel for auto-traction called **CNG** is a gas mixture that can show some differences according to the geographical zone and to other uncontrollable factors, depending on distribution network manager or supplier. Methane is the main component of Natural Gas, with a quantity between the 84% and the 99,5%. The presence of many gases reduces calorific value of CNG for automotive use, and, consequently, vehicle performances and autonomy.

Vehicle autonomy changes a lot also using LPG, because it depends on driving and maintenance conditions, but also on gas composition, which can change from season to season, but from filling to filling too. LPG is in fact a gas composition (Butane and Propane) mixed in a not standard way. Only using LPG complying with the European regulation "EN589" assures the right working of BRC gas equipment.

Performances (powers, speed, pick-up and consumptions) are slightly lower if compared to the petrol mode, both in LPG and in CNG mode.

Fulfilments and grants

Equipment final test dossiers change in accordance with the different National Regulations adopted, so you have to directly rely on the installer's workshop to fulfil all documents. You have also to verify national indications about the existence of possible grants for ecologic fuels sector and for LPG or CNG vehicles running in town centres or during traffic restrictions.

Guarantee conditions of BRC system and products

The system good working guarantee, relating to its correct installation, adjustments and maintenance, is issued and charged to the installer's workshop, to whom you can address to for any further information.

M.T.M. s.r.l. issues the good working guarantee of every single product bearing the BRC trademark, in accordance with norms and general guarantee conditions in force at the moment of installation.

A regular maintenance is essential to keep gas system in safety and low costs conditions. Besides the traditional care for your vehicle and controls indicated in the manufacturer's "Use and Maintenance" booklet, that any workshop can easily carry out, your **LPG or CNG** equipment ought to be submitted to maintenance by the "BRC Gas Equipment" authorised workshop that installed it.

Preventive maintenance of gas system components has a vital important for its good right working.

Products' ageing is a gradual process but, by doing some simple scheduled maintenance checks, you could keep low costs and high safety on your vehicle.

The following paragraphs will explain you when gas system components ought to be submitted to maintenance and what kind of operations must be carried out during each car service.

FREE CAR SERVICE COUPON

"BRC Gas Equipment" authorised workshop that installed your LPG or CNG system must execute the free car service. It must be made after the first **1.000-1.500 km** covered in gas mode, and it allows taking advantage of some operations without any charges. If you had your car serviced by a workshop different from the installer's one, some costs of labour may be charged.

SCHEDULED MAINTENANCE

BRC **chargeable** scheduled maintenance is based on car service coupons to be carried out 10.000, 20.000 km after the installation, and then, every 20.000 km in order to always assure the vehicle and gas system right working. For doing car service, you need to go to your installer and ask for the stamp application on the suitable coupon. These operations will assure the equipment right working and the Guarantee validity.

NOTE: Costs of labour for BRC components replacement will be charged to the customer, even if covered by builder's guarantee, if replacement operations will be carried out by a workshop different from the installer's one.

FREE CAR SERVICE COUPON
to carry out 1000 km after the installation

Plate: Vehicle:

Date: Kilometres:

- ✘ Inspection of LPG or CNG system mechanical components
- ✘ Air filter cleaning
- ✘ Inspection of spark plugs cables, spark plugs and ignition system
- ✘ Inspection of connection clamping
- ✘ Inspection of water-gas clamps tightening
- ✘ Inspection of carburation with BRC special instrument
- ✘ Replacement of FJ1 HE filter cartridge (LPG injection systems)
- ✘ Inspection, cleaning, possible repl. Zenith inlet filter cartr. (injection)

Other Inspections.....

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BRC workshop's stamp and signature:

SCHEDULED MAINTENANCE COUPON
to carry out 20.000 km after the installation

Plate: Vehicle:

Date: Kilometres:

- ✘ Inspection of LPG or CNG system mechanical components
- ✘ Air filter cleaning
- ✘ Inspection of spark plugs cables, spark plugs and ignition system
- ✘ Inspection of connection clamping
- ✘ Inspection of water-gas clamps tightening
- ✘ Inspection of carburation with BRC special instrument
- ✘ Replacement of FJ1 HE filter cartridge (LPG injection systems)
- ✘ Inspection, cleaning, possible repl. Zenith inlet filter cartr. (injection)
- ✘ Inspection and adjustment of valves gap

Other Inspections.....

.....

BRC workshop's stamp and signature:

**SCHEDULED MAINTENANCE COUPON
to carry out 40.000 km after the installation**

Plate: Vehicle:

Date: Kilometres:

- ✘ Inspection of LPG or CNG system mechanical components
- ✘ Inspection and replacement of LPG or CNG SV filter
- ✘ Air filter cleaning
- ✘ Inspection of spark plugs cables, spark plugs and ignition system
- ✘ Inspection of connection clamping
- ✘ Inspection of water-gas clamps tightening
- ✘ Inspection of carburation with BRC special instrument
- ✘ Replacement of FJ1 HE filter cartridge (LPG injection systems)
- ✘ Inspection, cleaning, possible repl. Zenith inlet filter cartr. (injection)
- ✘ Inspection and adjustment of valves gap

Other Inspections.....

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BRC workshop's stamp and signature:

**SCHEDULED MAINTENANCE COUPON
to carry out 60.000 km after the installation**

Plate: Vehicle:

Date: Kilometres:

- ✘ Inspection of LPG or CNG system mechanical components
- ✘ Air filter cleaning
- ✘ Inspection of spark plugs cables, spark plugs and ignition system
- ✘ Inspection of connection clamping
- ✘ Inspection of water-gas clamps tightening
- ✘ Inspection of carburation with BRC special instrument
- ✘ Replacement of FJ1 HE filter cartridge (LPG injection systems)
- ✘ Inspection, cleaning, possible repl. Zenith inlet filter cartr. (injection)
- ✘ Inspection and adjustment of valves gap

Other Inspections.....

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BRC workshop's stamp and signature:

**SCHEDULED MAINTENANCE COUPON
to carry out 80.000 km after the installation**

Plate: Vehicle:

Date: Kilometres:

- ✘ Inspection of LPG system mechanical components
- ✘ Inspection and replacement of LPG SV filter
- ✘ Air filter cleaning
- ✘ Inspection of spark plugs cables, spark plugs and ignition system
- ✘ Inspection of connection clamping
- ✘ Inspection of water-gas clamps tightening
- ✘ Inspection of carburation with BRC special instrument (check of signals and reset of possible errors recorded)
- ✘ Replacement of FJ1 filter cartridge
- ✘ Inspection and adjustment of valves gap

Other Inspections.....
.....

**SCHEDULED MAINTENANCE COUPON
to carry out 100.000 km after the installation**

Plate: Vehicle:

Date: Kilometres:

- ✘ Inspection of LPG or CNG system mechanical components
- ✘ Air filter cleaning
- ✘ Inspection of spark plugs cables, spark plugs and ignition system
- ✘ Inspection of connection clamping
- ✘ Inspection of water-gas clamps tightening
- ✘ Inspection of carburation with BRC special instrument
- ✘ Replacement of FJ1 HE filter cartridge (LPG injection systems)
- ✘ Inspection, cleaning, possible repl. Zenith inlet filter cartr. (injection)
- ✘ Inspection and adjustment of valves gap

Other Inspections.....

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BRC workshop's stamp and signature:

**SCHEDULED MAINTENANCE COUPON
to carry out 120.000 km after the installation**

Plate: Vehicle:

Date: Kilometres:

- ✘ Inspection of LPG or CNG system mechanical components
- ✘ Inspection and replacement of LPG or CNG SV filter
- ✘ Air filter cleaning
- ✘ Inspection of spark plugs cables, spark plugs and ignition system
- ✘ Inspection of connection clamping
- ✘ Inspection of water-gas clamps tightening
- ✘ Inspection of carburation with BRC special instrument
- ✘ Replacement of FJ1 HE filter cartridge (LPG injection systems)
- ✘ Inspection, cleaning, possible repl. Zenith inlet filter cartr. (injection)
- ✘ Inspection and adjustment of valves gap

Other Inspections.....

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BRC workshop's stamp and signature:

In an emergency

Today's LPG and CNG systems mean safety. Stringent laws assure components perfect construction and, during their test, pipes and fittings tightness are controlled.

"BRC Gas Equipment" gives special importance to the components tests and checks. During its assembly, dimension and integrity of every single piece is verified. Tightness, inner pressures, solenoid valves tightness and coil working are checked after the assembly.

So, product used for realizing this system is synonym for technology, quality and safety.

VALVES CLOSING

If, unfortunately, vehicle is involved in an accident, before going to the authorised workshop, it's better to change over to petrol. Safety solenoid valves of the gas system will close automatically.

Moreover, multivalve on LPG tank has a manual tap that allows stopping the gas going out from tanks.

Call the area BRC dealer and ask him for the closest BRC authorised workshop, that will assist you in accordance with its work organisation.

System disassembly

Eventual disassembly must be carried out by a BRC authorised workshop. After this operation, vehicle must be submitted to the final test again.

BRC dealers

A wide distribution network assures the presence of BRC Gas Equipment wherever LPG and CNG fuels are diffused.

Before moving to a foreign country, please consult our website http://www.brc.it/info/concessionarie_en.html, and search for the BRC dealers to contact for any assistance or information about gas in the country of destination.

M.T.M. s.r.l.

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