

# ***User Manual***



## 1) INFORMATION ON THE PRODUCT:

FULL FLEX GOLD is a product specially developed by WCV Tools for vehicles with ignition management and digital injection systems (Multipoint and Monopoint). It aims to offer the user a choice of using gasoline, ethanol or E85.

Full Flex GOLD is a fully automatic and programmable bi-fuel electronic manager whose functions are controlled by software. This software operates with the information received from the vehicle modules (*E.C.U.*). The manager receives the information generated by the module and processes new calculations, thus generating increased fuel economy and better performance of the car system.

It can be used by any vehicle in good maintenance condition and mainly in original Flex vehicles, which will display stronger and better system performance.

## 2) HOW TO USE IT:

The FULL FLEX GOLD installation is simple and is made using connectors, without cutting wires and without interfering in the vehicle originality.

FULL FLEX GOLD is installed on the line of the injection nozzles and a wire connected to the negative of the battery. (See connection diagram for proper installation of the product)

The correct operation of the system requires that some vehicle sensors, like the MAP sensor and the lambda probe sensor are in PERFECT CONDITION and that the injection nozzles are clean. In case of deficiency in these sensors, the vehicle module will receive erroneous information that will be relayed to the bi-fuel manager and consequently generate wrong calculations for the vehicle, thus causing an economy failure.

**\*check the vehicle compatibility (application table)**

### 2.1) ESSENTIAL REQUIREMENTS TO BE MET BEFORE THE INSTALLATION

General inspection of the vehicle condition, such as:

- Spark plugs and spark plug cables;
- Fuel and oil filters;
- Cleaning of the injection nozzles\*;
- Fuel pump;
- MAP sensor;
- Change of the engine oil;
- Cooling liquid;
- Lambda probe sensor;
- Or any other defect.

**\* Indispensable like the reverse cleaning.**

The items above must be inspected and changed if necessary, considering that the vehicle has run with gasoline for a long time. This fuel causes a great internal carbonization in the engine, like oil sludge and a high degree of rust in the cooling liquid.

When you start using ethanol, that is a cooler and cleaner fuel, the carbonization left by the gasoline in the combustion chamber internal valves starts to get loose and may cause a premature wear of the valve control, of the catalyst and even burning of the fuel pump.

Therefore, it is EXTREMELY IMPORTANT to inspect these components and sensors, as well as their correct performance. Only thus the system will perform its function in the vehicle, which is TO GENERATE ECONOMY.

“WE DO NOT” recommend the FULL FLEX GOLD installation in vehicles over 62,500 miles.

### 3) VEHICLE CONDITIONS:

#### **Spark Plugs and Spark Plug Cables:**

They should be kept with the same thermal degree indicated by the engine manufacturer; this should not be altered. They should be changed each 6,000 miles.

#### **Fuel, oil and engine oil filters:**

They should be changed for the engine safety and user comfort sake. It is recommended to make the change at the first 625 miles after the Full Flex Gold installation, because the oil can be contaminated with the sludge caused by gasoline. From then on, the change should be made at each 625 miles.

#### **Engine:**

The use of adulterated fuel is very common today, which causes large concentrations of sludge on the motor block causing losses and even the motor block locking.

In spite of the higher consumption per mile traveled, the ethanol is cleaner and does not cause this type of problem and if used in an E85 mix it will promote better lubrication of the parts in contact with the mixture and thus, will increase the engine useful life and ensure a significant increase in fuel economy.

"The engine that runs on ethanol and gasoline is more economical, ensures a long useful life due to the low contamination of oil and most importantly, is pollution free".

#### **Fuel Pump:**

Check the fuel pump pressure and flow. These items are important for the good operation of the system. These data should be in accordance and within the standards set by the vehicle manufacturer. After confirming the compliance of the data above, you may proceed with the Full Flex Gold installation.

The use of ethanol reduces the vehicle original fuel pump useful life, a serious wear can occur up to the burning of the pump. In order to avoid these problems it is recommended to use a minimum of 20% of gasoline in the vehicle. **If the burning of the pump occurs, a pump for ethanol should be installed.**

#### **Injection Nozzles:**

The injection nozzles should be cleaned each 6,250 miles, in view of the dirty existing in the fuels nowadays. The injection nozzles are gauged to run under the normal pressure of 3.0 bar, with 5% tolerance; a low tolerance that if not respected, can cause losses: increased consumption, poor vehicle performance, bumps while changing gears and difficulty to reach the maximum speed. For that reason we should always check the injection nozzles. It is recommended to clean the injection nozzles again, at the first 625 miles after the Full Flex Gold installation.

**Polarity:**

The polarity of the injection nozzles is important; some vehicle manufacturers invert the feeding, thus causing problems when you have to install some equipment. However, Full Flex Gold recognizes the polarity automatically, as well as the injection nozzle resistance and the current used, thus avoiding problems during the product installation.

**Cold Starting:**

The cold starting is recommended for those who want to use 100% ethanol in the vehicle and in places where the temperature is below 15°C.

**Lambda Sensor:**

It should be in perfect operating condition, which means that submitted to an evaluation it should be oscillating between 50 and 950 millivolts, always bordering on minimum and maximum. It should not lock.

**MAP Sensor :**

Check the sensor pressure, which should be within the manufacturer's specifications. The MAP sensor useful life is 25,000 miles; it is advisable to change it after that.

**4) INFORMATION FOR USERS**

Good preventive and corrective car maintenance will keep you out of trouble.

This manager will perform effectively only if your vehicle is in perfect mechanical and electrical conditions.

FULL FLEX products are carefully tested after their manufacturing process for quality control purposes and are released for sale only after their perfect condition is confirmed.

If you have any question, please contact the WCV Tools Engineering Department, at the site: [www.fullflex.com.br](http://www.fullflex.com.br) or by phone: (11) 5535-7200 / 5531-8784

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