

# Energy and Water Solutions

A Division of Awesome Pool Products, LLC

902 West 2010 South, Syracuse, Utah 84075

Voice: 801-5580 Fax: 801-825-5428

Website: [www.ewsews.com](http://www.ewsews.com) Email: [sales@ewsews.com](mailto:sales@ewsews.com)

## DIEL

### CNG Carbureted Change Over Switch Owners Manual Model CNGCCM

#### General Description

This Change Over Switch has been designed especially for use in CNG equipment installed in vehicles with a Carburetor or EFI (Electronic Fuel Injection).

The main characteristics are:

- Two types of operation changed by jumper. Mode 1 Carburetor. Mode 2 EFI.
- Engine starts with gasoline fuel and automatically changes to CNG when the engine reaches the set RPM level.
- Emergency Starting in CNG mode.
- Setting RPM change to CNG.
- CNG level gauge with reserve

#### Electrical Characteristics

Voltage: 12 VDC.

Max switch current: 10 A

Protection fuse: 5A

Max consumption: 60W

#### Packaging

Control Unit

Pressure Manometer with Sensor

Wire Harness

Insulating Cases and Terminals

Mounting Screws

5 Amp Fuse

Owners Manual

#### Carburetor Operation – Jumper in Carburetor Mode

In this mode, the microprocessor provides all the necessary functions to provide CNG for carbureted vehicles.

With the three-position switch you have four possible states: CNG - MIX - GASOLINE – NEUTRAL

**CNG:** In the CNG mode the vehicle will start with CNG, but only if the microprocessor senses pulses from the brown wire connected to the negative of the ignition coil or when wrapped around one or more spark plug wires. The level of CNG LED in the cylinder will be displayed indicating that you are in the CNG mode. This is the mode you should use in normal operation.

**MIX:** When changing the switch from the initial position of CNG to the Neutral midpoint position, the mode changes to the MIXED FUEL state. This is a temporary state for the fuel to change from of CNG to Gasoline. The gasoline solenoid is opened to let gasoline flow to fill the carburetor while the engine continues to operate on CNG. When the presence of both fuels is felt, you must change the switch to the Gasoline position. The lack of fuel during the filling of the carburetor is avoided, avoiding loss of power when changing from one fuel to the other.

**GASOLINE:** Once the MIX operation is completed and the switch is in the Gasoline position the circuit will keep the gasoline solenoid open to operate on gasoline fuel, meanwhile do not switch to the CNG mode while in the gasoline mode. The switch must be placed in the Neutral mode first as explained below. The CNG level LED indicators will be off and the Gasoline LED will be on while in this mode.

**NEUTRAL:** When changing the switch from the initial position of Gasoline to the Neutral midpoint position, the mode changes to the NEUTAL state. Both solenoids will be closed allowing the carburator to empty. As soon as you feel the engine begin to run out of gasoline, you must change the switch to the CNG position so the engine will begin to operate on CNG. Operating on both fuels at the same time is avoided. Never change the switch directly from the Gasoline position to the CNG position without waiting for the carburator to empty.

### **Electronic Fuel Injection Mode - Jumper in Injection Mode**

In this mode, the microprocessor provides all the necessary functions to provide CNG for EFI vehicles. With the three-position switch you have three possible states: CNG - EMERGENCY – GASOLINE

**CNG:** In the CNG mode the vehicle will start with gasoline and the fuel will be change to CNG once the set RPM level set by the installer is reached. The level of CNG LED blinks until the status is changed to the CNG mode. Once the mode is changed to CNG the level of CNG LED will remain on. The CNG mode will be maintained until the position of the switch is change or the ignition is turned off. The Change Over RPMs can be set from 1,000 to 2,000 RPMs by rotating the white control on the back of the control module. The fuel change over will only take place during deceleration.

**EMERGENCY:** This system has an emergency start function on CNG in case of a malfunction of the gasoline injection system.

The following steps must be done to start the engine on CNG:

1. With the ignition off, set the switch to the Neutral midpoint position.
2. Start the engine and verify the engine is running in the CNG mode with the CNG Level LED on and the gasoline LED off.

Note: This emergency state will be permanent until another mode is selected.

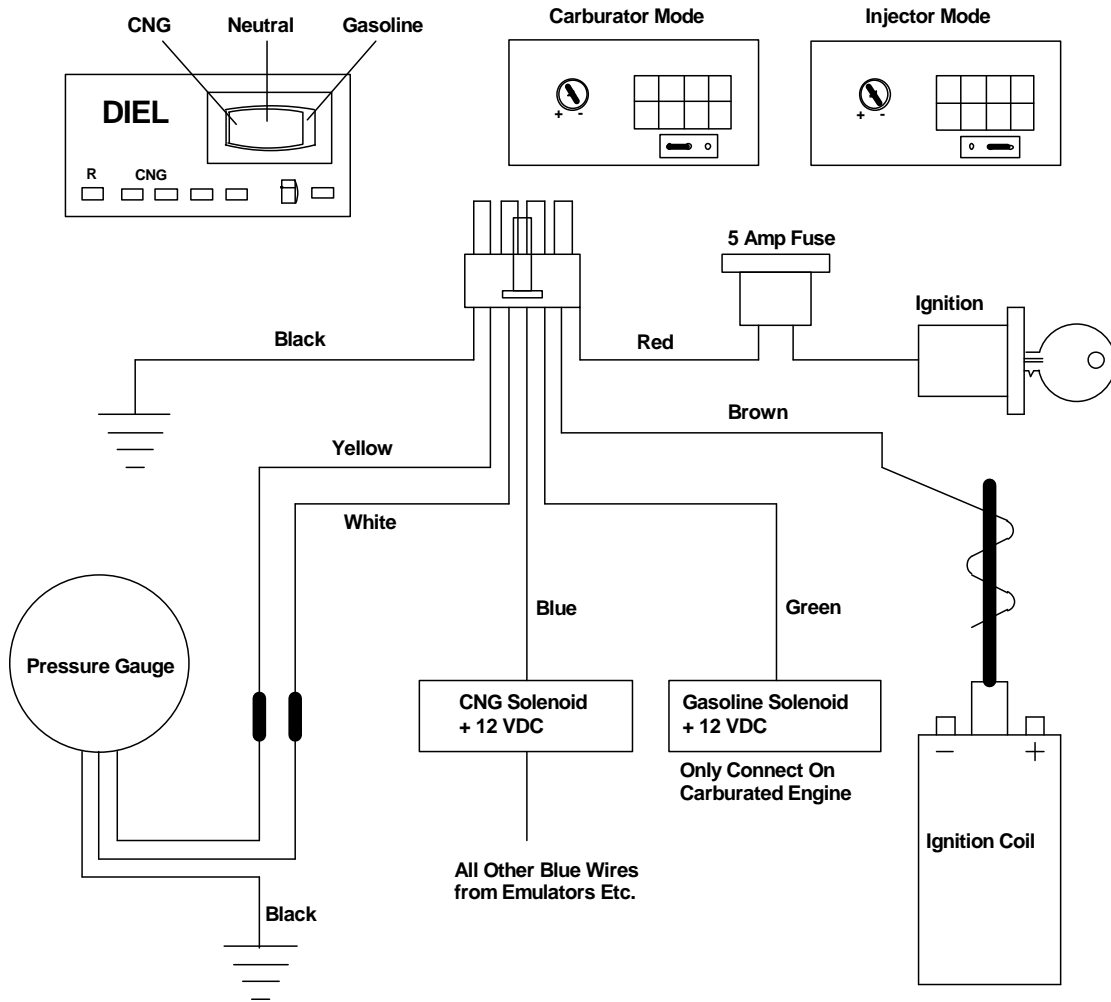
**GASOLINE:** With the switch in the Gasoline position the engine will start on gasoline and will not automatically change to the CNG mode. The CNG level LED will remain off and the gasoline LED will remain on.

**Fuel Change:** While in the EFI mode, the fuel can be change anytime you want to make a fuel change by changing the switch to the other fuel while the engine is running.

**Caution:** Changing fuel while the engine is at low RPMs may cause the engine to stall.

## Wiring Diagram

Read and follow your CNG Kit Instructions before wiring.



**Do not call your dealer or EWS with installation questions unless you are sure there is a problem with your conversion kit. It is your responsibility to install your kit. Call a friend for help or take your car to a repair shop for help if needed.**