

Research Article

Water Hybrid System to Run Vehicles on Water

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Abstract

Who says cars cannot run on water? The paper focuses to develop practical and efficient technique to make cars run on water. The water-hybrid system is a practical solution developed for use in fuel-injected and carbureted motor vehicles. The secret of the water-hybrid system lies within its HyTronic module. It produced relatively low voltage, but uniquely shaped electronic pulses of precise frequency and duration. The overall power consumption of the HyTronic module and the entire water-hybrid system is fairly low; actually low enough to be easily powered by your vehicle excess electrical and heat output, and with enough reserve power left to help run all your vehicle's other electrical devices. You don't need carbon that pollutes atmosphere and bankrupt citizens.

Keywords: Water Hybrid System, HyTronic module etc.

Introduction

We can't think our lives a single even without vehicles which helps in covering long distances in short time. It is a fact the vehicles need fuel to run and this fuel is derived from the natural resources our Earth provides with. It is also a fact that our exhaustible resources are coming to an end and we need to find soon an alternative solution to it. These fuels on getting burnt releases many harmful gases like carbon-dioxide, carbon-monoxide etc. which are responsible for global warming. It is need for the hour to provide an alternate solution, a renewable resource which even do not pollute the environment. Talking in business point of view the cars which run on water will get a high demand especially from middle section of society . As there will be no non-renewable fuel used it will drastically reduce the cost of making and running cars.

Problem with Existing Models

Many people do not realize that when we are running a vehicle we are actually running on hydrogen and all we are going to do is utilizing hydrogen from water. There were some previous researches on the topic but all had their shortcomings. They were trying to utilize simple process of electrolysis to generate electricity but actual implementation in vehicles needs an advanced view to this property.

Water electrolysis is simply the breaking down of water into its basic hydrogen and oxygen atoms by passing an electronic current through it. You don't even have to add an electrolyte (such as acid) to the water to assure electrical conductivity, as is required with a battery; plain

old tap water works fine .In fact, electrolysis is in many ways similar to the reaction which occurs within your vehicles' battery. Electrolysis of water use nothing new; it was first accomplished nearly a century ago. But, until technologies like the water-hybrid system were developed, it required a high voltage power supply and consumed vast amounts of electrical energy. It actually required much more electrical energy than the energy derived from the combustion of the resulting hydrogen and oxygen. In other words, it was an extremely inefficient process that had limited practical use

Water Hybrid System

While each component is essential to its operation, the heart of the system is the Hydrogen/Oxygen Generator since it converts water into combustible gaseous fuel to power your engine.

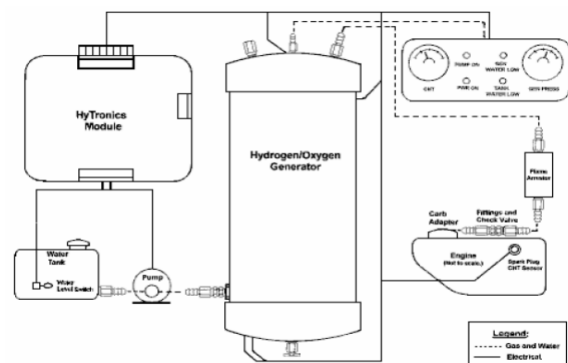


Fig. 1 Water Hybrid System

A water tank and pump store and supply water for the generator. Simple electronic signals from the HyTronic

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Module initiate and sustain the creation of hydrogen and oxygen within the Generator. An In-Dash Gauge and Indicator Assembly allows you to accurately monitor all aspects of the Water-hybrid system. Every part of the Water-hybrid system is ruggedly designed, for reliable operation and long life.

Hydrogen/Oxygen Generator

The Generator housing contains a basic coil and two cylindrical electrodes; used to generate both hydrogen and oxygen. Each can be made from a variety of materials such as stainless steel and/or ceramic, also very durable materials. However, two atomically different forms of hydrogen are produced within the Generator. Most of the generated hydrogen is orthohydrogen, a very powerful and fast burning gas created by the two electrodes. A precisely controlled, high frequency electronic signal from the HyTronics Module activates and controls the electrodes.

The other form of hydrogen, parahydrogen, is created by the coil, but in much less quantity than orthohydrogen. A precisely controlled, very low frequency electronic signal from a separate circuit within the HyTronics Module activates and controls the coil. Parahydrogen is a less powerful and slower burning gas, but is necessary to prevent pre-combustion (commonly called knocking) within your engine. Parahydrogen slows the burning rate of the hydrogen mix, thus boosting its octane level. Such precise control allows you to exactly match your engine's octane requirements. To raise octane levels in gasoline, specific additives must be used to slow its burning rate. At best this is an inexact science since it depends upon trying to average the octane requirements for millions of engines.

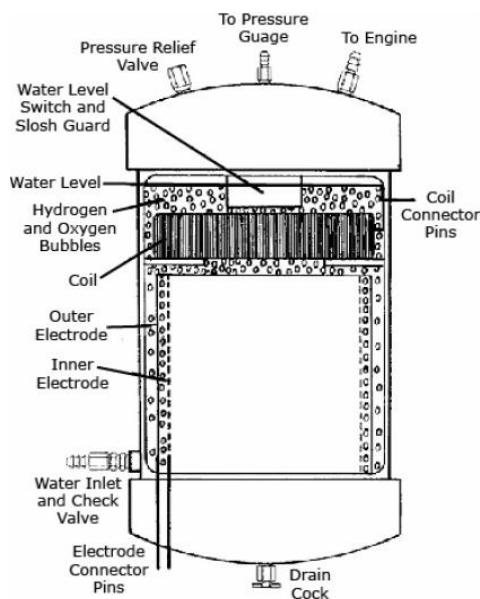


Fig. 2 Hydrogen/Oxygen Generator

Technically speaking, the Hydrogen/Oxygen Generator itself is an electronic-based unit. The two electrodes form a basic capacitor, thousands of times larger than capacitors used in typical circuits, with water acting as its dielectric. The inner electrode is negatively charged, and the outer electrode is positively charged, by the high frequency

HyTronics signal. Chemically, each water molecule (H_2O) is composed of two positively charged atoms of hydrogen and one negatively charged atom of oxygen. Since opposite charges attract the positively charged hydrogen atoms are pulled toward the inner electrode. But, at the same instant, the negatively charged oxygen atoms are pulled toward the outer electrode. This action aligns every water molecule between the electrodes, with the ends of each molecule being pulled in opposite directions. In a nutshell, this is the hydrolysis process central to hydrogen extraction.

For a few brief moments, only more accurate alignment and increased pulling action upon the water molecules occurs. But, the HyTronics signal pulses keep charging the water capacitor to higher and higher voltage levels; actually several thousand volts. Suddenly the electrical forces become so great that the water molecules burst apart (scientists call this action disassociation) into their gaseous forms of hydrogen and oxygen. If you were able to look into the Generator, this action would be obvious because of the formation of millions of tiny hydrogen and oxygen gas bubbles. As long as the HyTronics signal is applied, the water capacitor remains fully charged; continuously creating orthohydrogen and oxygen.

Another electronic circuit is formed by the generator coil. This is an inductive circuit, meaning it creates a magnetic field as opposed to the charged field created by the water capacitor. The very low frequency HyTronics signal (actually a short pulse) activates the magnetic field of the coil. As soon as the pulse stops, the magnetic field collapses. This creates an even stronger magnetic field, but a field of opposite polarity. That is how an inductive circuit works, an action commonly called inductive kick. Each pulse is precisely timed so that almost immediately after the magnetic field reverses, another short pulse arrives. Once again the coil is charged and its magnetic field collapses. But now the continually reversing magnetic field becomes even stronger due to added energy of each new pulse. Eventually (actually within just a few seconds) the coil reaches its maximum magnetic strength, called its saturation point.

Most molecules are affected by magnetic fields. The coil's reversing magnetic fields vibrate the water molecules so vigorously that they disassociate into gaseous forms of parahydrogen and oxygen. Disassociation observably occurs, as seen by the creation of millions of tiny hydrogen and oxygen gas bubbles around the coil.

By varying the strength and frequency of the HyTronic signals, the rate by which hydrogen and oxygen are created can be varied to match engine requirements at any particular moment. Water is supplied by the tank and pump, while water level within the Generator is controlled by a level sensor and switch. For safety purposes, a relief valve protects against excess pressure buildup within the generator. Separate ports are provided for attaching hoses to route gas to the engine and to an optional gauge to monitor gas pressure buildup within the generator. A drain valve is installed to allow periodic flushing of accumulated minerals and contaminants. The bottom end cap is threaded so that the Generator can easily be opened up for inspection or repair and for occasional cleaning of

the electrodes and coil. Two pairs of stainless steel (copper, or any conductive metal) rod ends protrude from the Generator body to provide electrical connection of the electrodes and coil to the HyTronics Module.

As shown in Figure 1, the generator gas output hose connects to a flame arrestor, which in turn connects to pressure fittings attached to the engine. The flame arrestor provides protection against combustion flashback into the Generator in the event that engine backfiring occurs. As with the Generator, the arrestor body is constructed from CPVC pipe. It's a simple unit using small diameter pipe, end caps with hose fittings, and stuffed with stainless steel wool. Pressure fitting kits are readily available at engine shops. They're designed for converting engines to run on propane, so they are perfectly adaptable to the Water-hybrid system.

Water Tank and Pump

We need to check the levels of water in the tanks so that we are able to refill before it finishes. To fulfill the purpose we will be using sensors and indicators. It's best to use a generously sized water tank of .5 to 1.5 gallons capacity. The tank I'll be recommending holds over 2 gallons and has translucent level markings, so it's easy to see how much water remains. The extra of capacity of water takes up very little space, but leaves a good reserve for less frequent refilling. I recommend installing a 6-inch vent tube into the tank cap to prevent spillage from sloshing water.

In- Dash Indicators

Figure 3 permits easy monitoring of Water-hybrid functions, I recommend two gauges: Generator pressure (GEN PRESS) and engine cylinder head temperature (CHT). I also recommend four indicator lights: GEN WATER LOW, PUMP ON, TANK WATER LOW, and PWR ON. These can be installed into your vehicle dash, or mounted in a nearby console.

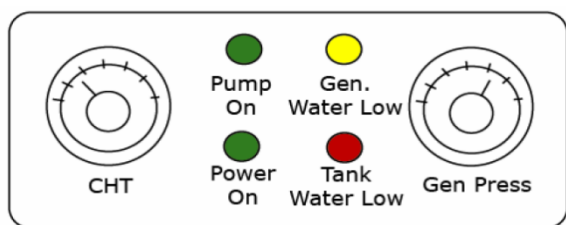


Fig. 3 IN-Dash Indicators

Monitoring the GEN PRESS and CHT gauges allows you to develop a feel for how the system responds to various driving conditions

The GEN WATER LOW light normally remains unlit. As fuel (water) is consumed, the Generator water level gradually drops until the GEN WATER LOW light illuminates. At that point the water pump should start pumping water, illuminating the PUMP ON light. When Generator water has risen back to its normal level, the GEN WATER LOW light should go back out. At the same time, the pump should stop running, turning out the PUMP

ON light. So, under normal operating conditions, both lights should be illuminated at the same time, and both lights should go out at the same time. Any other light combination indicates a malfunction.

The TANK WATER LOW light illuminates when tank water level drops to its 1/3 full point, indicating that you should think about filling the tank before long. The PWR ON (Power ON) light should light, and remain lit, as long as the Water-hybrid system is operating normally. The signal for this light comes from the HyTronics Module. So, if the PWR ON light ever goes out (except when the system is intentionally turned off), or becomes intermittent, the HyTronics Module is malfunctioning.

Hytronics Module

The HyTronics Module contains electronics circuits for controlling and/or providing power to all the water-hybrid system's electrically operated devices. Separate circuits exist to perform each of the following functions:

- 1) Provide power to the Generator electrodes in the form of a high frequency signal, creating orthohydrogen and oxygen
- 2) Provide power to the Generator coil in the form of a very low frequency signal, creating parahydrogen and oxygen.
- 3) Control power to the water tank pump via signals received from the Generator water level sensor
- 4) Provide busing and terminal points for distributing power to system gauges, indicators, and sensors.

Generator Electrode Circuit Diagram

Referring to the following Figure 4, this square wave pulse has an ON: OFF ratio of 1:1. That is, the pulse is turned ON for as long as it's turned OFF. The square wave pulse shown in the following Figure 5 has an ON:OFF ratio of 3:1. That is, the pulse is turned ON for three times as long as it's turned OFF. The Generator electrode circuit of Figure 5 is capable of varying its square wave pulse ratio between 1:1 and 10:1.



Fig. 4 Square Wave- On: Off Ratio 1:1



Fig. 5 Square Wave- On: Off Ratio 3:1

Each ON: OFF pulse sequence is referred to as a cycle since each new pulse sequence keeps cycling ON and OFF in an identical way. Figure 4 shows three cycles of ON:OFF pulse sequences. If these cycles were all to occur within a time span of one second, we would refer to the pulse as having a frequency of 3 cps (cycles per second). If 127 cycles were all to occur within a time span of one

second, we would refer to the pulse as having a frequency of 127 cps.

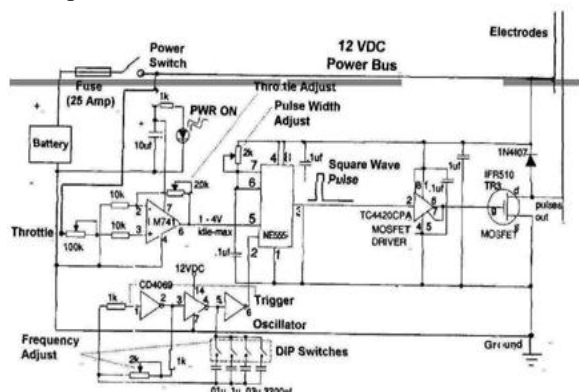


Fig. 6 Generator Electrode Circuit

The square wave pulse ratio determines the amount of current sent to the Generator electrodes by the circuit of figure 6. If the ratio is low (1:1), very little current arrives at the electrodes. So, very little hydrogen and oxygen are produced by the Generator. If the ratio is high (10:1), maximum current reaches the electrodes and the Generator produces maximum gas volume. Varying voltage input from a potentiometer connected via a 10K resistor to pin 3 of component LM741 causes the circuit to vary the pulse ratio, and therefore controls the amount of gases produced. The potentiometer shaft connects to the vehicle throttle linkage, enabling control of gas volume in direct response to voltage changes correlating with rotation of the potentiometer shaft in relation to throttle positioning. A trimming potentiometer connects pins 2 and 6 of component LM741, enabling precise adjustment of the throttle input signal. A second trimming potentiometer connects pins 4 and 7 of component NE555, enabling precise pulse width adjustment.

Generator Coil Circuit Diagram

The following Figure 7 depicts the schematic diagram for the generator coil circuit. Its output is a square wave pulse which is applied to the coil of the Hydrogen/Oxygen Generator shown in figure 1.

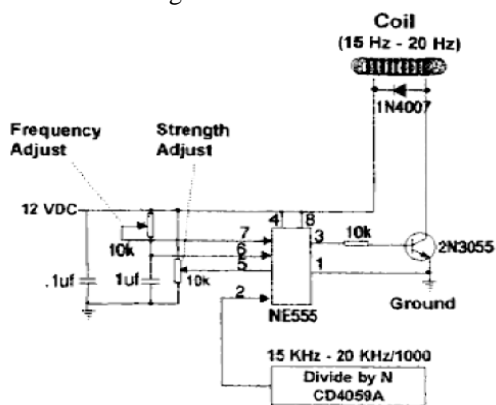


Fig. 7 Generator Coil Circuit Schematic

The Generator coil circuit creates a pulsed signal very much similar to that of the electrode circuit of figure 6;

but, production of parahydrogen and oxygen by the coil entails totally different operating parameters than does orthohydrogen and oxygen production by the electrodes. Optimum operating frequency for the coil is much lower, within the range of approximately 16 Hz to 25 Hz. Coil frequency directly correlates to the optimum operating frequency of the electrode circuit since its input signal is received directly from pin 3 of electrode circuit component NE555. The electrode circuit signal is received via the Divide by N logic circuit which produces one output signal in response to a specific number of input signals. For example, if the optimal frequency of the electrode circuit is 19 KHz and the Divide by N logic circuit creates one output pulse for every 1,000 input pulses, the output frequency of the Divide by N logic circuit would be 19 Hz. That signal is received via pin 2 of component NE555, which creates the required square wave pulses. Those pulses are sent via pin 3 to the base of transistor 2N3055, where they are amplified and transmitted to the coil

Practical Implementation

The water-hybrid system is called a conversion system because it doesn't require removal, modification, or disabling of any of your vehicles' existing systems. Therefore, it allows you to run your vehicle on either 100% gasoline systems or the water-hybrid system. In the unlikely event that your Water-hybrid fails, you can easily switch back to solely using gasoline power

Conclusion

Water hybrid system will prove to be much more promising technology of the future. It will not only reduce our dependency on non-renewable and polluting fuels it will also bring the car cost down. This will help middle class people even to afford cars. It is an ecofriendly technology which will help us in fighting global warming and saving our mother earth.

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