

HHO and your Carbureted Vehicle

I receive an unusually large amount of inquiry's regarding the addition of Browns Gas (HHO) to a carbureted vehicle and what must be done to attain significant gains in fuel mileage. Although it is possible to get small gains just with the addition of an efficient electrolyzer with controlled output, it is possible to achieve much larger gains with other modifications.

First lets review what happens with the introduction of HHO into the air intake system. Contrary to popular opinion the **HHO is not being used as a fuel**, but rather as a catalyst. HHO has a flame propagation approximately 1000 times faster than that of gasoline. This much greater flame speed causes greater combustion, and a more complete burn of the fuel. On the average carbureted vehicle, 30-50% of the gasoline passes through the engine and out the exhaust, unburned. Our objective is to reduce the gasoline input to the engine by this same 30% to 50% and use the HHO to burn it all.

The first thing that is needed to accomplish our objective is an efficient electrolyzer (HHO Generator). Efficient being defined as a generator that will produce enough HHO to supply your vehicle, that does not draw more amperage than 15% of your alternators rated output. A good rule of thumb is when you successfully lean out the fuel flow (as will be described later) and make proper adjustment to the ignition timing, you will only need $\frac{1}{4}$ liter of HHO, per liter of engine size, delivered to your engine.

The second thing that is needed is either a Black Box Controller, or a very good quality CCPWM (constant current pulse width modulator). Not a PWM they just won't get the job done, and require constant adjustment by the user. One of the characteristics of all electrolyzers is the fact that as they are running they become warmer. When they raise in temperature, they draw more amperage. When they draw more amperage, more HHO is being produced and even more heat is being created, which causes greater amperage draw, more HHO production, and more heat. This cycle, will keep repeating itself until a condition known as thermal runaway occurs. Every vehicle

has a maximum amount of HHO that it can effectively and efficiently use. Too much HHO will actually cause you to lose mileage, and too little HHO will not produce mileage gains. With either of the two devices mentioned earlier, you can regulate the amount of HHO being produced and sent to your engine. They both are user adjustable and will automatically hold the setting that you set.

The third thing that is needed is a reduction in the amount of gasoline being sent to your engine. Due to the greatly improved combustion and more complete burn, it is no longer needed. There are basically two different ways to accomplish this goal. The first, and the one that I recommend is the purchase of a carburetor enhancer kit. This is available from eagle-research.com the alternative is to purchase an assortment of leaner jets for your carburetor and change them until you find the right combination that works on your vehicle. This can be very time consuming, and is a hit or miss situation.

The fourth and final thing needed is to retard your ignition timing as much as possible without affecting performance.

Installation of HHO when done correctly on carbureted vehicles, can produce huge mileage gains. You now have the basics. The fine tuning and tweaking are up to you. Have fun, and enjoy your mileage gains.