

**HHO Hydrogen Generator Dry Fuel Cell Installation Manual Instructions  
Presented by LaBella's Auto Repair <http://labellasautorepair.com>**

**HHO Supplemental Hydrogen Generator Kits, Sales, Service, Testing,  
Products**

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**TOPICS:**

- ✓ WHAT WILL MY MILEAGE GAIN BE?
- ✓ SAFETY PRECAUTIONS
- ✓ LET'S GET FAMILIAR WITH YOUR NEW DRY FUEL CELL
- ✓ INSTALLATION
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**MANUAL FOR DRY FUEL CELLS**

**WHAT WILL MY MILEAGE GAIN BE?**

We have that question frequently asked. The fact is the answer to that question cannot properly be answered without stipulation. We might add, if one does so— we will be polite here— he may be ignorant to the real extenuating facts. First of all, supplemental hydrogen induced into any engine will not produce effective results UNLESS the engine is in VERY GOOD running condition. This means if your engine has ANY of the following problems: piston rings and/or valve(s), engine miss, check engine light on, oil

burning consumption, unusual smoke emitting from exhaust and/or breather system, or overheating, or has not been tuned according to factory recommendations, DO NOT expect any fuel mileage improvement. And don't install anyone's HHO system until it is rectified by a professional that does mechanical work for a living and has ASE (Automotive Service Excellence) certification credentials (see company profile: <http://www.labellasautorepair.com/index.htm#profile> . Simply stated, HHO is not a fix-all; but it is a proven fact that supplemental hydrogen reduces engine emissions and increases fuel economy. Scientific documented proof of this fact can be read here: [http://www.labellasautorepair.com/bettermileage\\_howto.htm](http://www.labellasautorepair.com/bettermileage_howto.htm) . However, supplemental hydrogen must be installed properly and the engine and its computer, where applicable, must be properly tuned for each application to accommodate the HHO induction. Placing any kind of supplemental hydrogen generator system onto any engine, without addressing the aforesaid, will yield little or no fuel mileage improvement. And if anyone leads you to believe otherwise, you will inevitably be rudely awakened. We at LaBella's Auto Repair have been in the mechanical automotive repair business for a living, with proof certification credentials upon request, in a real building structure, in a business zoned location, with an address on it and a reachable phone number, in the national phonebook Yellow Pages, with added proof location verification on the world-recognized Google Earth (2641 Delaware Ave, Kenner, Louisiana 70062) not to mention the World Wide Web— for over 40 years. We are not a backyard outfit in a residential neighborhood in some off-the-wall, nameless-address location or in a house-attached garage with a phone number or contact information that is seldom reached successfully. We pay tax to the local Jefferson Parish and Louisiana State and USA Federal Government and possess a real federal tax ID number 720758366 for which all business are required to have. Make no mistake about it, we are not saying you cannot do successful business with other companies that may be different in their operations. We are only saying be vigilant. Make sure before you make a purchase that there's real support if you have questions and need help and that the phone will be answered or a return call will be made when you leave a message. **Please do not call us for any support if you have not made a purchase from us.** We are experts in engine diagnosis and the problems associated with such and have a data base of factory repair manuals, wiring diagrams and test equipment to make professional repairs and recommendations. Nonetheless, we can say with reasonable confidence that those who have followed the aforesaid have gotten satisfactory results from supplemental hydrogen installation and development— no matter where they've made the purchase. The information herein is provided to ALL viewers of our Web site with the idea of improving both fuel mileage and environmental conditions.

Best wishes from LaBella's Auto Repair and Company....

## **SAFETY PRECAUTIONS**

Incorrectly installing or incorrectly using our Hydrogen Dry Cell (or hydrogen generator) may result in serious damage to your automobile or bodily injury. Read and follow the instructions and safety precautions given here and in relevant places throughout this manual to avoid these hazards. If you do not understand these instructions or do not like working on vehicles, have your mechanic do the installation. It should take 30 to 45

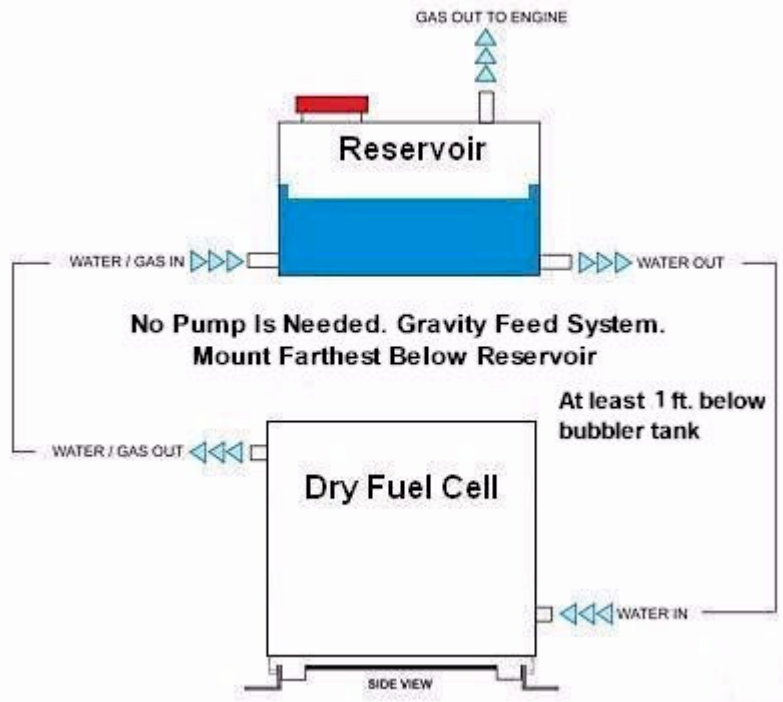
minutes to install this unit. Be sure to work outside, no smoking; make sure the engine is not hot.

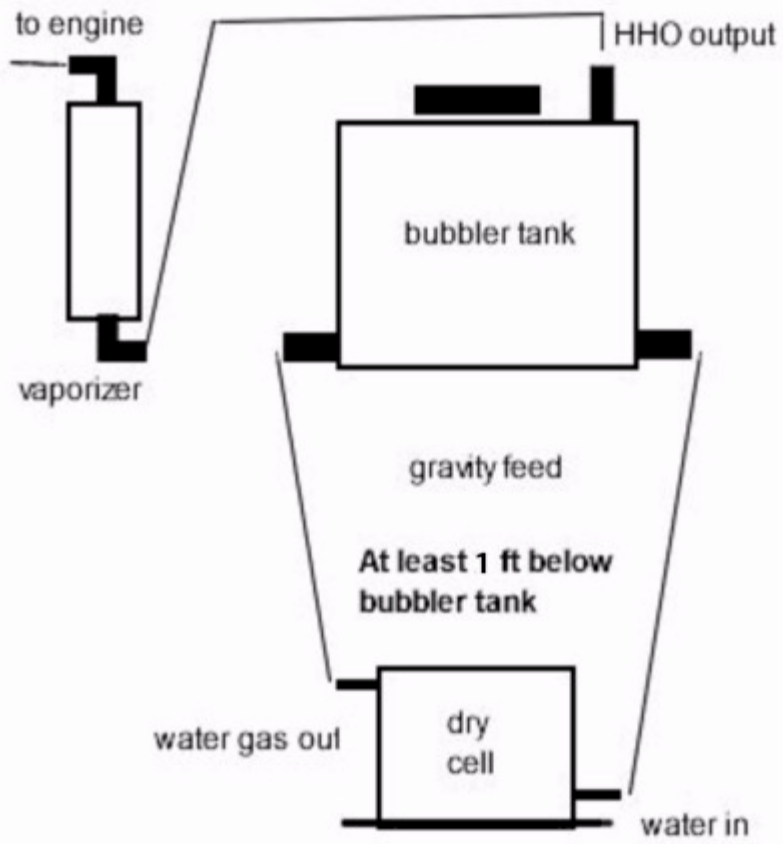
Be sure to wear goggles and rubber gloves and only use professional tools; use common sense and general safety procedures used for automotive installations and maintenance. If you're not sure, ASK! Yes, HHO is combustibile – AFTER IT ENTERS THE ENGINE – that's the whole point. Your Hydro Fuel Dry Cell system does not store hydrogen when installed properly, so there is no fire hazard due to hydrogen storage. So, don't let people who have no understanding of the system intimidate you or tell you about non-existent hazards. Hydrogen dry cell technology cools down the engine and adds safety to any car.

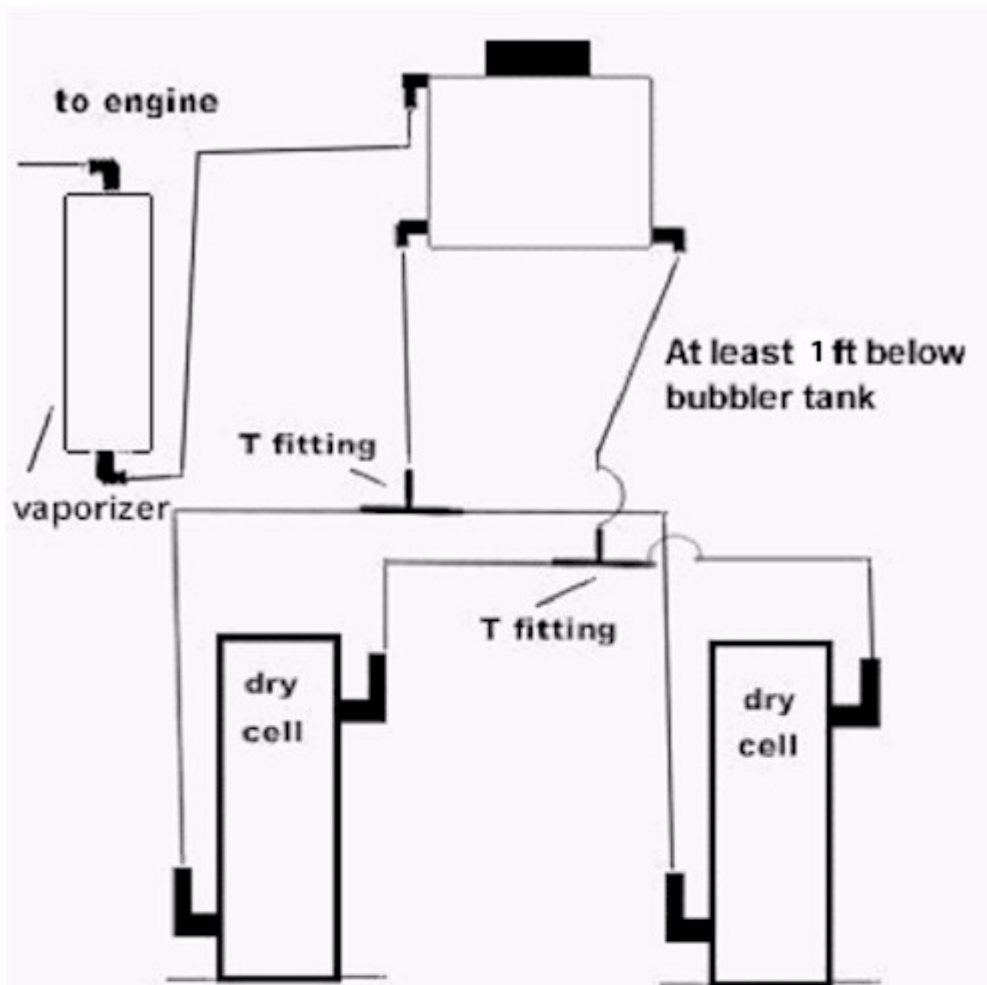
The article “Shade Tree Safety” By Mike Bumbeck of autoMedia.com is a recommended reading that will give more education for the do it yourself mechanic.

**WORD OF CAUTION:** Avoid unnecessary fears and that includes listening to self-appointed “experts”. Because the safety notes in this manual are not intended to intimidate or stop you, only to add to your safety.

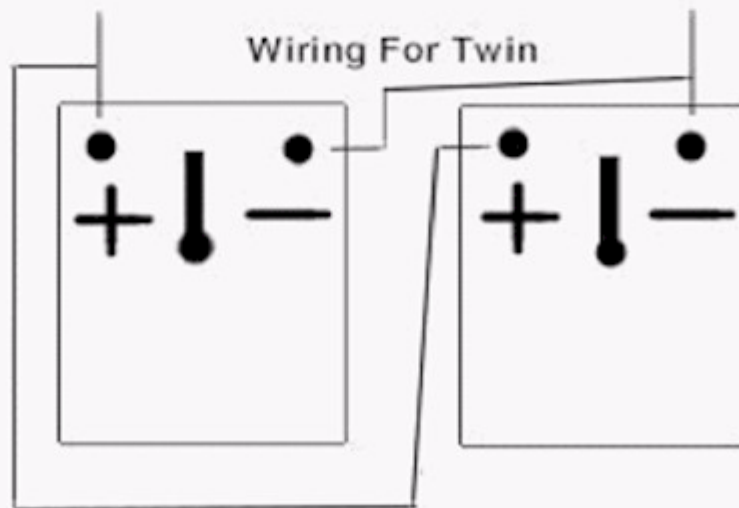
### LET'S GET FAMILIAR WITH YOUR NEW DRY FUEL CELL







Twin Dry Fuel Cells In Parallel



## ***INSTALLATION:***

The Dry Fuel Cell is the heart of the system that generates the HHO gas and cools down the engine. You will need to find a place in the engine compartment to mount your new Dry Fuel Cell. It **MUST BE MOUNTED UPRIGHT WITH THE CHANNEL IRON MOUNTS LEVEL TO THE GROUND & The fitting openings facing NORTH to the sky,** and NOT side mounted or it will not work properly and you will have unstable amp draw that could blow the fuse. It should be mounted and secured in such a manner as to assure that it cannot bounce around when the vehicle hits bumps etc. Your Dry Fuel Cell comes with mounting holes which make your cell easy to install. Be sure to install your new Dry Fuel Cell so that it can easily be accessed and can be conveniently cleaned and serviced or inspected from time to time. Your new Dry Fuel Cell comes with a Reservoir/Bubbler that looks similar to the one above.

Make sure that your Reservoir/Bubbler is installed the same as you see it above. As you can see, the Reservoir/Bubbler needs to be higher than your Dry Fuel Cell by 1 foot or more. Furthermore, make sure ALL hose connections to the fittings are securely tightened with hose clamps and in the rare event there happens to be a fitting leaking at any of the threads, use Teflon tape or plumber's Goop to seal them according to the product's instructions. This system works off of gravity and will not work properly if it's not installed right. There are no pumps involved with the circulation. **If using twin (double) Dry Fuel Cells, connect them only in parallel as seen in illustration above, including the wiring; in series method should not be used as it will not work properly.** The other important device that needs to be installed with the Dry Fuel Cells is the vaporizer condenser. Some call this a scrubber. This device needs to be installed upright as seen in the illustration. In any case, this keeps the electrolyte from entering into the engine which could cause damage by cylinder washout or trigger the check engine light. It also keeps buildup from occurring in the output line. If any electrolyte enters the vaporizer, it will eventually be sucked back into the bubbler tank after the engine is turned off. If you install the Dry Fuel Cell without this, you are taking a chance of the engine sucking electrolyte into the intake manifold. This is particularly damaging to diesel engines because it could easily cause engine lockup. If you're not sure of something, pick up the phone and give us a call.

## ***Dry Fuel Cell Performance Notes:***

Multiple Dry Fuel Cells can be used to increase HHO output capacity (LPM) if fuel mileage gain is unsatisfactory. Of course this is with the understanding that you have leaned out ALL of the computerized sensors (where applicable) as outlined herein and followed ALL instructions. An example of this is, if you have a single Dry Fuel Cell, you can add another one in parallel and test the vehicle's fuel mileage. It is possible to use a total of three fuel cells in parallel with the 30 amp pulse width modulator and the 3/8 inch ID hose. If you connect more than three fuel cells you will need to connect them in parallel and in twos (pairs controlled by separate or dual control pulse width modulators). When connecting the Dry Fuel Cells in parallel, view them as one single Dry Fuel Cell. It

is also possible to run multiple Dry Fuel Cells of 4 or more with 3/8 ID hose if you run them in pairs using the same configuration as seen in the dual (twin) Dry Fuel Cell illustration. To accomplish this you will need to install 2 additional 3/8 x 1/4 NPT plastic fittings into the bottom of the bubbler tank for each additional pairs of fuel cells to accommodate the output and input hoses from the Dry Fuel Cells to the bubbler tank. Two pairs of Dry Fuel Cells (totaling 4 Dry Fuel Cells) can use two 30 amp separate or dual control pulse width modulators to control the two pairs of Dry Fuel Cells. Keep in mind that a 30 amp pulse width modulator can only handle under 30 amps and to run it higher than that will damage it. The dual pulse width modulator or two separate pulse width modulators will allow you to control the two pairs of Dry Fuel Cells at different amp rating if you desire. If you want to add more Dry Fuel Cells, pair them in twos and control them as aforementioned. This way you will not have to use larger ID hoses and connections. Separate Dry Fuel Cells will run cooler than one large Dry Fuel Cell in most cases. Nonetheless, the Dry Fuel Cell will only perform at it best after the engine has reached full running temperature with the factory recommended engine thermostat (engines that run too cool or do not reach factory recommended running temperature will not experience the best fuel mileage gain). Experience has shown that short runs will yield less fuel mileage gains whereby the longer the run the better the fuel mileage gain because the Dry Fuel Cell must warm up to run at its full performance capacity. Average warm up time is 10 minutes. Thus if you drive short runs of that duration with a full cooling down of the engine in between the runs, you will not see much fuel mileage gain. In freezing temperatures it will be necessary to use antifreeze in the bubbler tank reservoir. Such antifreeze used in windshield washer reservoirs or mobile home water holding tanks will do the trick, but you will have to increase the electrolyte mix to offset the additive. An amp meter will aid in setting the correct electrolyte mix to amp draw ratio as outlined in the electrolyte mix instructions.

**View Our YouTube HHO Dry Fuel Cell Demo Video:**

[http://www.youtube.com/watch?v=X6p\\_udDj0zA](http://www.youtube.com/watch?v=X6p_udDj0zA)

***IMPORTANT:***

**Diesel engine applications do not need to install electronic computerized enhancer devices for fuel consumption efficiency.** Such devices are referred to as “efie’s” (electronic fuel injection enhancers) which are applicable to gas burning fuel injected vehicles- not diesel fuel burning engines.

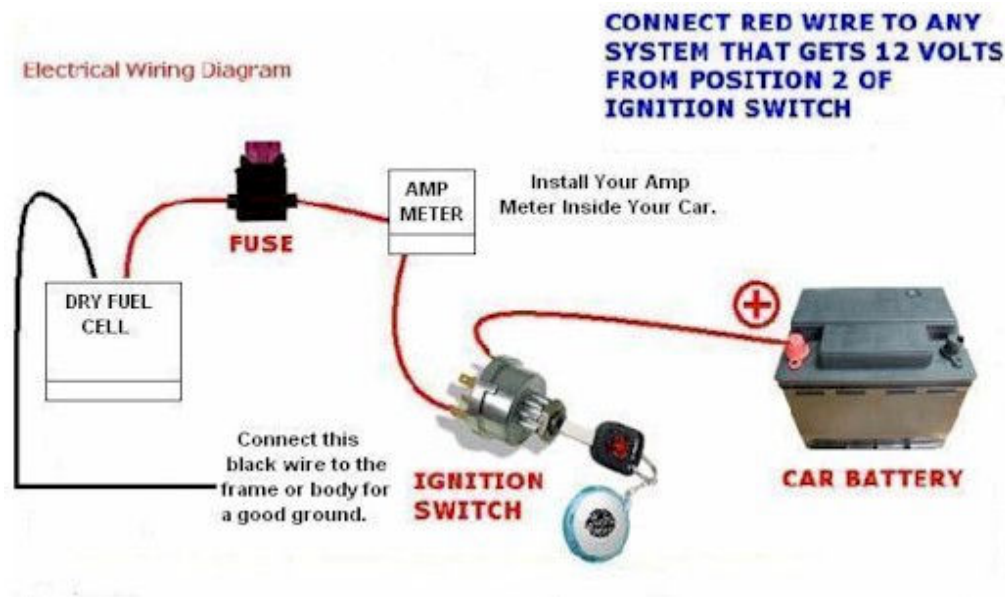
Try to install your new Dry Fuel Cell as far away from the heat of your engine. Locate the coolest available place in the engine area. We cannot give you an exact number here for what is “too hot”, because there is a combination of heating factors here. There is a situation called Thermal Runaway, where an increase in ambient temperature combined with to high of electrolyte mix can lead to a destructive result to the Dry Fuel Cell. You can prevent this from happening by following instructions below and utilizing what’s called a pulse width modulator (PWM) to keep a stable current draw to Dry Fuel Cell.

**IMPORTANT:**

Your new Dry Fuel Cell device is operated by vacuum pressure from your vehicle's engine, plus a 12 Volt supply from your vehicle's electrical system. The device is designed to operate on 12 Volts. Refer to the wiring diagram below. If you're not sure, consult with your auto mechanic, or contacting us for help.

**Connecting The Power Source**

Please refer to the illustration below for typical wiring configuration for powering the Dry Fuel Cell. The diagram may vary if you use a pulse width modulator (PWM) as described further in this installation instructions below.



Useful resource: <http://www.AHDOL.com> - the Automotive Hobbyists Digital Online Library (AHDOL) provides FACTORY WIRING DIAGRAMS upon request, for vehicles sold in North America between 1984 and 2007. Cost of complete vehicle diagrams per vehicle is \$11.99 and is guaranteed to be delivered, via email, within 24 hours.

1. Identify a point in your vehicle's electrical system which has 12 Volts (positive) present ONLY WHEN THE ENGINE IS IN THE RUNNING ignition position for connecting to the Dry Fuel Cell positive electrical connection terminal. Be sure to install an amp meter where you can easily view the amp draw of the Dry Fuel Cell at all times, possibly inside the vehicle. If you use a pulse width modulator (PWM), this can aid in a stable amp draw to the Dry Fuel Cell because you can set the amp draw at a specific setting which is covered further in this installation.
2. Connect the black terminal of Dry Fuel Cell to a good ground source near the Dry Fuel

Cell. If using a pulse width modulator (PWM), see illustration dealing with this type wiring schematic below.

### **How To Run Your HHO Gas Into Your Vehicle.**

Now it's time to connect the HHO gas output line to your vehicle so you go much further on a tank of gas. (Follow the diagram below).



### **How To Use Your Vacuum**

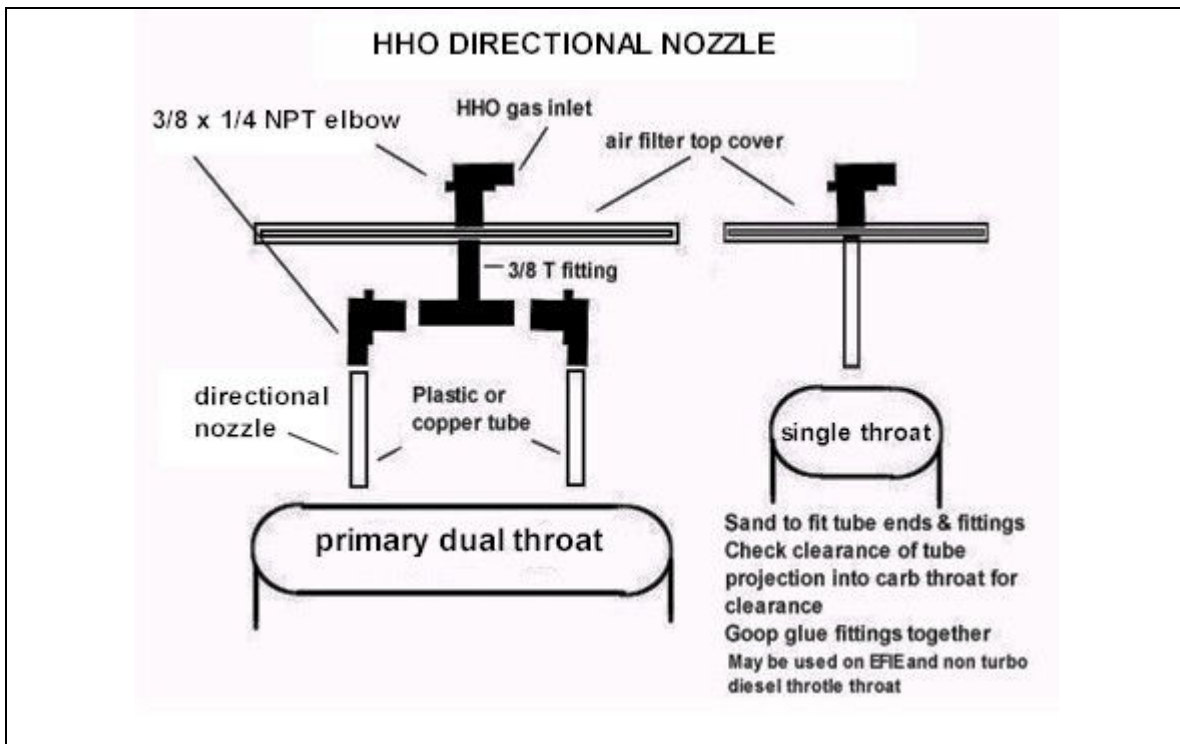
#### ***VACUUM***

Dry cell systems should be connected to the closest area to the throttle throat (throttle body), not directly to intake manifold vacuum. The idea is to suck the HHO gas into a place such as the carburetor throat or fuel injection throttle body, where it can be automatically mixed with the existing fuel/air mixture. Best connection spot on carburetors and injection systems is at the closest location to the throttle body throat. Connect the output hose on the air filter container right above the carburetor throat and on fuel injection system, right above the throttle body throat by means of a fitting. On rubber duct type hoses, you can use a soldier gun and melt a hole in the rubber duct closest to the throttle body and glue and screw the fitting into the hole with Goop glue. On metal or hard plastic ducts, remove and drill hole, thread it, install fitting, and then clean the metal shavings out of the duct before installing it. **On diesel or gas engines with turbo charger(s), the HHO output hose goes into the intake system BEFORE the turbo charger.** On twin turbo chargers you will have to use a 3/8 T fitting at the end of the HHO output hose to run 2 additional hoses, one each, to each intake system BEFORE each turbo charger. 2, 3/8 elbow fittings will be needed to tap into the intake system to connect the output hoses to. **WARNING:** If you put the HHO output hose into the intake AFTER the turbo charger(s), the HHO system will become pressurized, damaging the HHO system. (See typical HHO output hose connection diagram above)

**WARNING: DO NOT SHORTEN THE OUTPUT VACUUM LINE** between the engine intake and the Dry Cell. Keep the line (hose) at least 4 ft long. This length must be kept to enhance safety and prevent damage to the device.

### *HHO Gas Directional Nozzle*

Another trick in optimizing the HHO gas induction is to direct the HHO gas out line as close as possible into the throttle throat by fabricating a directional nozzle so that it directs the HHO gas right over the primary throat(s) be it a carbureted or fuel injected engine. This also works on ALL non-turbo diesel and non-propane burning engines. It is very important to direct the HHO gas into the throttle throat without the directional nozzle obstructing any of the moving parts like the choke flap or throttle plate. This can be fabricated with the use of 3/8 x 1/4 NPT elbow fittings, a 3/8 vacuum T fitting and 3/8 OD clear tubing, copper tubing, or plastic tubing assembled with Goop glue as depicted in the illustration. Sanding of the mating areas may be needed to get the fittings to tightly fit into one another before gluing.



### *FINAL SETUP*

Filling the Reservoir/Bubbler with DISTILLED WATER & THE ELECTROLYTE:

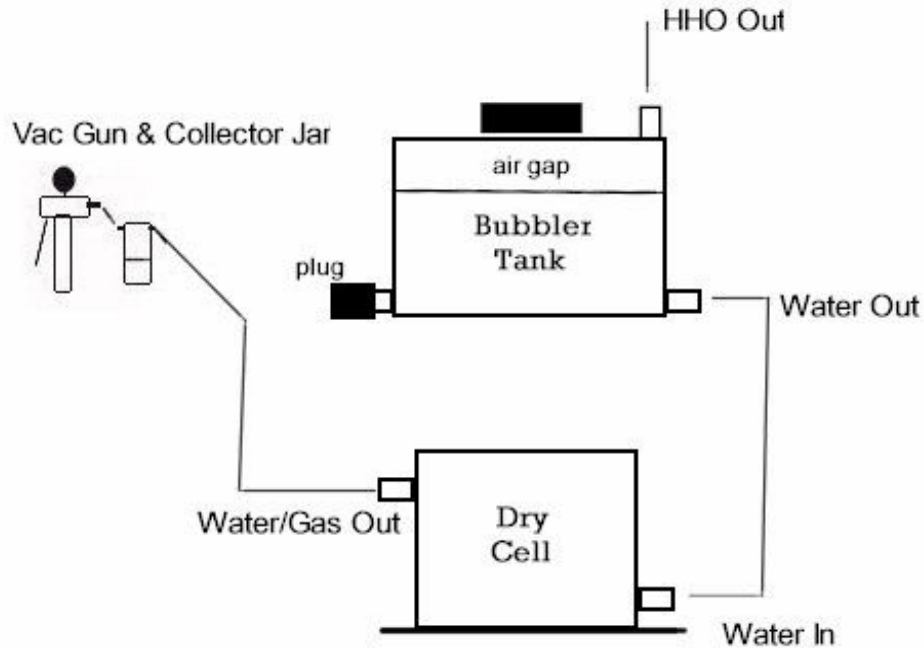
### *ELECTROLYTE*

(IMPORTANT NOTE) Our web site is available to anyone on the Internet. There is some information that is only for those who paid for the product. For example, we have our own formula for the electrolyte we use in our dry cells. This formula runs cleaner and more efficient than most things on the market today. This is according to our experience not theory. Just give us a call 1 504 469 9986 or send us an [e-mail](mailto:labellas@cox.net) <mailto:labellas@cox.net> with your proof of purchase and we will give you the password to this link, click: [http://www.labellasautorepair.com/forms/electrolyte\\_mix.pdf](http://www.labellasautorepair.com/forms/electrolyte_mix.pdf) that contains the electrolyte mix and information.

Try to use at least a 1 quart Reservoir/Bubbler. Be sure to make your mix with that in mind. Our Dry Fuel Cell was made to run cooler, therefore you might need more or less electrolyte to bring your cell up to the operating standard we have set for this model: 10-15 amps but see the link for the electrolyte mix aforementioned for full clarification.

Once you have your mixture ready, pour it into the top of the Reservoir/Bubbler up to the water level line. (see sample diagram below) This is just a sample of a 2 quart Reservoir/Bubbler. Be sure to leave about 1/4 of the tank empty (75% full). What you decide to use is your decision. While you are filling the unit, you should be able to see water running down to your Dry Fuel Cell. If you don't see any water going down the tube, this could mean you don't have the Reservoir/Bubbler high enough above your Dry Cell. Always try to install your Dry Cell at the lowest level on your vehicle at least 2 feet or lower. The dry cell system should be bled of all air before operating or unstable amp draw will occur and may cause main power fuse to blow. It is not recommended to use your mouth to do any bleeding of lines but use a vacuum pump gun (like a Mityvac <http://www.mityvac.com/> ) and collector jar to perform the bleeding as indicated in image below at the outlet line to bubbler tank connection. Low controlled air pressure (below 5 psi) may be utilized if a vacuum gun is not available at the bubbler tank cap opening area with a wet rag around a regulated air nozzle while blocking off all openings but the one at the Dry Fuel Cell outlet line which would be placed in a container (jar or bucket) while utilizing eye, face, and breathing protection.

Fill bubbler tank 75% full with electrolyte mixture, leave cap loose and disconnect and plug inlet nipple, then attach vac gun and collector jar to the inlet line and bleed all air from system. Remove inlet plug and reconnect line and tighten filler cap.



### ***TEST RUN:***

1. Start by checking all your connections. Make sure your amp meter and inline fuse have been installed.
2. Now start your vehicle. While it's running, watch for bubbling action inside of your Reservoir/Bubbler. You should be able to see the gas entering the Reservoir/Bubbler tank.
3. Now it's time to check how many amps your dry cell is pulling. This cell was made to run at 10-12 amps without overheating at all. It will produce over 1 liter of HHO gas per minute if you have everything hooked up according to the instructions (that's all the hydrogen your vehicle will need to see an improvement in fuel mileage).
4. If you have done everything right, within a short time, you will notice that the engine starts to sound dramatically different. It will sound smoother and quieter. Your RPM's may be unstable for a couple of minutes. This is normal. The HHO is starting to change the combustion cycle and cancels the pinging and the engine is now adjusting to the

changes. Your RPM's will normalize in a couple of minutes.

Congratulations! Your new Dry Fuel Cell is now producing Hydrogen Gas!

This is a professional dry cell and it is not made out of kitchen or Home Depot utensils like with many other application designs. This is for the expert experimenter; not the novice. What you do with this is up to you. However...Keep in mind if you install this in a vehicle you will still need something to fool the computer- leaning out the fuel mixture for the HHO gas to take FULL effect. Yes, we have heard of generators that require no computer lean outs, and these do work, but we believe that the best fuel mileage results are accomplished with computer lean out devices (efie's or O2 sensor devices) most of the time (excluding diesel applications which do not need "efie's" as described earlier)

## **THIS IS JUST THE BEGINNING**

### **YOU MUST FOOL THE COMPUTER**

Why do I have to fool the computer? Most modern-day fuel injected vehicles use a computer and oxygen sensing devices to monitor and maintain the correct oxygen/fuel ratio. One of the key sensing devices is the oxygen sensor or called exhaust sensor. Fuel injected vehicles have one or more oxygen sensors installed in them. The computer extrapolates what the air/fuel ratio is, based on the amount of oxygen in the exhaust, as reported by the oxygen sensor.

When a fuel saving device is installed, such as an oxy hydrogen generator, the petroleum based fuel is burned more completely. One of the results of this is that there is more oxygen (and less unburned hydrocarbons) in the exhaust stream. This is a good thing, and is in fact, what we are trying to achieve. However, the computer will perceive this condition as a "too lean" air/fuel mix. In other words, what is now a desirable condition in the exhaust, will be interpreted as "not enough fuel", and the computer will direct the fuel injectors to increase the amount of fuel being pumped into the engine. The result is that the oxygen sensor and computer prevents efficient combustion from occurring! In other words, it cancels out most of the improvement we have just made.

### ***The Solution***

The oxygen sensor "tells" the computer what the oxygen content is by providing a voltage on its signal wire between 0 and 1 volt. 450 millivolts (.45 volts) means that the fuel/air mixture is correct. Higher values means the mix is rich (has too much gas), and lower voltages means the mix is lean. By adding voltage to the sensor's output, we can compensate for the additional oxygen in the exhaust and lean out the vehicle to get maximum MPG.

You must use device(s) that enhances the signal to the (ECU), such as an EFIE (electronic fuel injector enhancer) which goes on the oxygen sensor(s) BEFORE the catalytic converter(s).

## OXYGEN SENSOR EFIE INSTRUCTIONS

*Typical O2 Sensor EFIE:*

Click: [http://www.labellasautorepair.com/manuals/efie\\_adjust.pdf](http://www.labellasautorepair.com/manuals/efie_adjust.pdf)

*Digital O2 Sensor EFIE:*

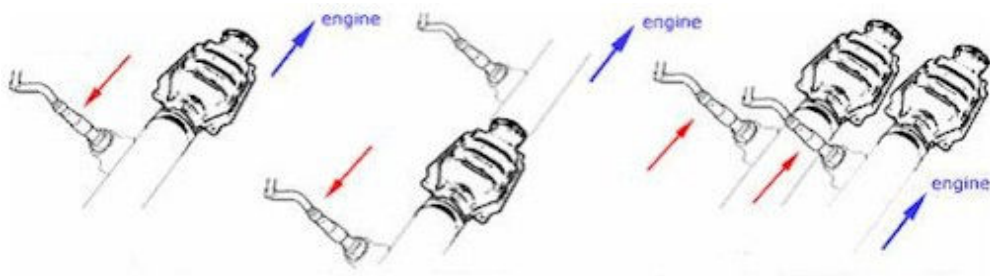
Click: [http://www.labellasautorepair.com/manuals/digital\\_o2.pdf](http://www.labellasautorepair.com/manuals/digital_o2.pdf)

*AFR Air Fuel Ratio Sensor Enhancer EFIE Wideband O2 Sensor Toyota*

Click: <http://www.youtube.com/watch?v=sS6olflowik>

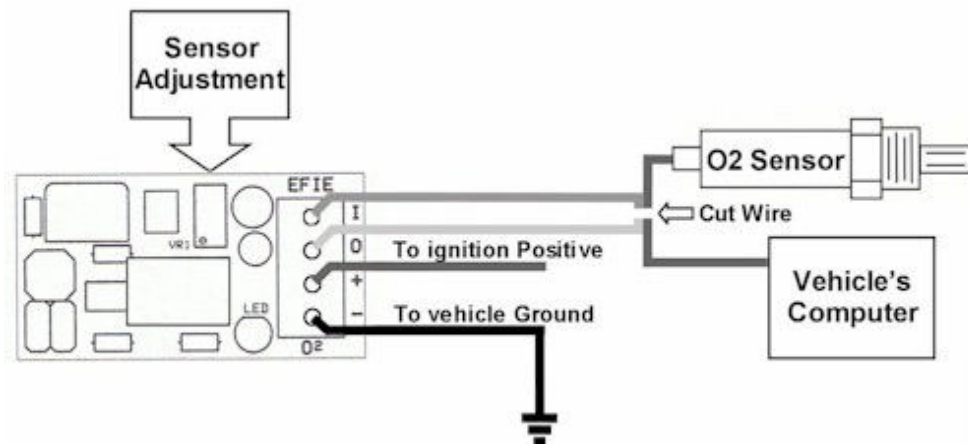
Contact us for product purchase

## DIAGRAM OF TYPICAL O2 SENSOR LOCATION



Most cars have oxygen sensors both before and after the catalytic converter. The ones downstream from the converter do not need to be treated. Their data is used to determine when the converter has gone bad, but are not used in the air/fuel ratio calculations. These devices are only needed for all upstream oxygen sensors.

## DIAGRAM OF A TYPICAL EFIE DEVICE



However, oxygen sensor isolators can sometimes work instead of an O2 oxygen sensor EFIE.

## OYXGEN SENSOR ISOLATOR INSTRUCTIONS

Click: [http://www.labellasautorepair.com/manuals/o2\\_isolator.pdf](http://www.labellasautorepair.com/manuals/o2_isolator.pdf)

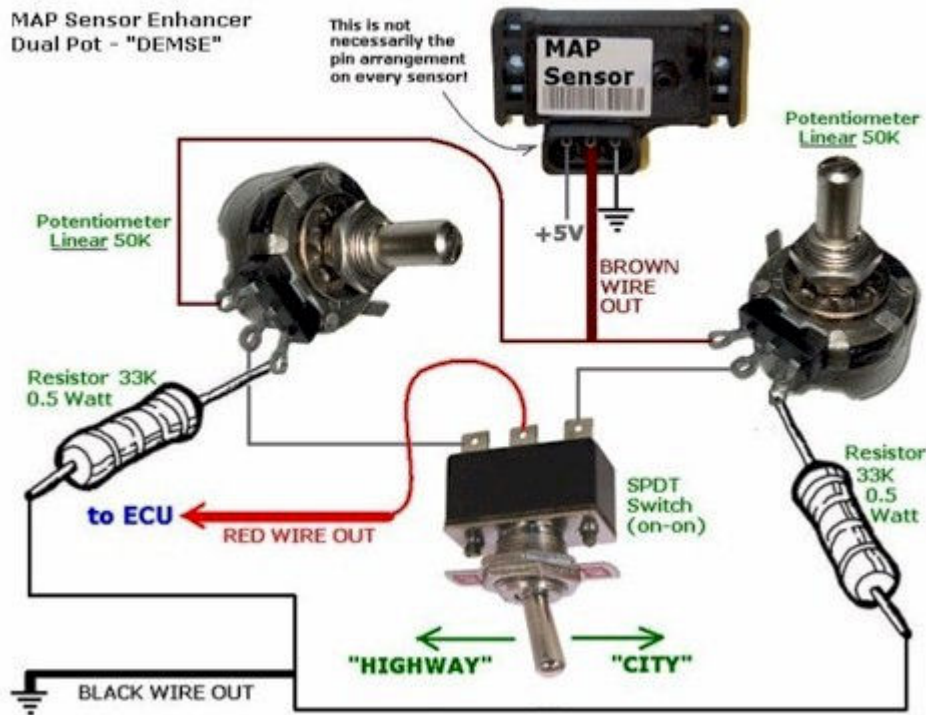
If you expect the very best fuel mileage results (this may not be necessary in all cases pending your mileage results), you may need to address other fuel injection sensing devices other than the O2 sensors. For example, if your vehicle has a MAP (manifold absolute pressure) sensor, you need to install a MAP/MAF enhancer on it (see illustration below). If the vehicle has no MAP sensor but has a MAF (mass airflow) sensor, a MAP/MAF enhancer needs to be installed on it (see illustration below). In some cases the vehicle may have both, in which case you only address the MAP sensor.

## MAP/MAF ENHANCER INSTRUCTIONS

Click: [http://www.labellasautorepair.com/manuals/map\\_enhancer\\_adj.pdf](http://www.labellasautorepair.com/manuals/map_enhancer_adj.pdf)

### MAP/MAF ENHANCER INSTALLED ON MAP SENSOR

MAP/MAF Enhancer Installed on MAP Sensor



## MAP/MAF ENHANCER INSTALLED ON MAF SENSOR

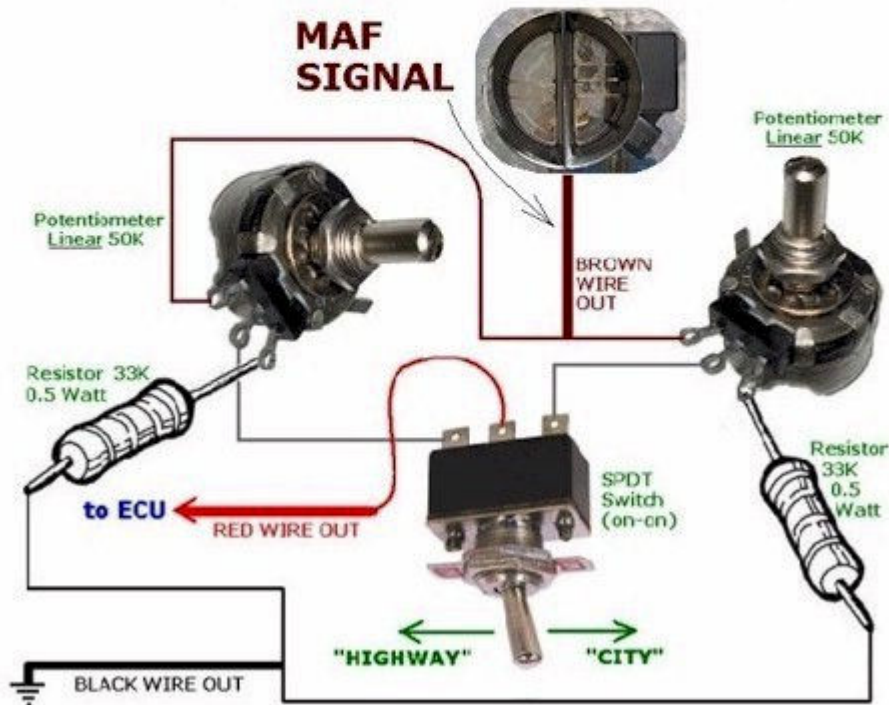
### MAP/MAF Enhancer Installed on MAF Sensor

IF YOU HAVE a MAP sensor – by all means use it!

If no MAP sensor, add the circuit shown below or hack into the sensor circuitry if you can.

Once this works, test it. If you get MPG differences of 50% between full rich and full lean, you're good to go. You have full control over the mixture.

If you get change in the range of 15%-25%, I suspect that you have SOME control (which is a great start) but not all that is possible.



### *Air Flow Meter Lean Out*

View Our YouTube How To Lean Out An Air Flow Meter Video:

<http://www.youtube.com/watch?v=AydgSxSKzD4>

An Air Flow Meter (often seen on older Robert Bosch fuel injection systems) should not be confused with its more modern counterpart, the Mass Air Flow sensor as depicted above (MAF) that virtually does the same thing- monitors the incoming air intake volume. An air flow meter uses a spring-loaded door that moves simultaneously with the depressing of the throttle plate, allowing incoming air to enter the intake. The air flow meter door is connected to a potentiometer finger that changes the resistant value as it moves across a printed resistor circuit board, causing the injectors to either allow more or less fuel through correspondingly. Air flow meters have an access cover on them that is silicone glued into position but can be opened up after cutting the glue away. Inside is a clock-like spring that can be tightened: leaning fuel mixture; or, loosened: richening the

fuel mixture. The setting of this spring is done while the engine is in full running temperature by tightening the spring to lean the engine and then test drive to make sure the engine does not experienced too much power lose. The gear dial that controls the spring tension inside the flow meter usually has a locking mechanism on it to keep the setting in place. You have to release the lock as you move the gear dial that controls the spring tension. You must be careful when unloading the gear dial lock retainer when setting the spring tension because if you let it completely release, it will unwind and go to full rich position and the engine will kill out and not restart until you retighten the tension to where the engine will run again.

## **CARBURETOR LEAN OUT**

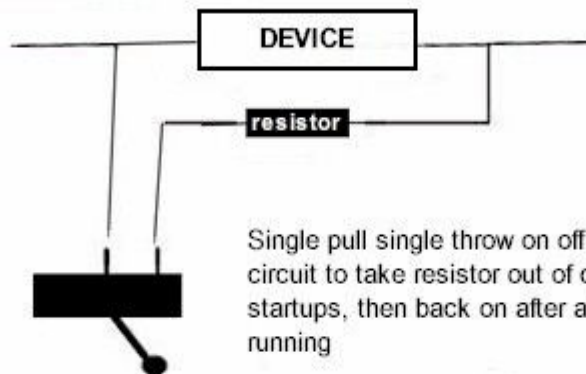
On engines with carburetor(s), you can lean out the fuel mixture by screwing the air/fuel mixture screws in some after the engine reaches running temperature and the choke flap is in wide-opened position. It is not necessary to change the carburetor main jet(s) to a smaller size, but if you are skilled enough, that is another option. Further leaning can be accomplished by retard the timing by 5 degrees or more and install Super Sonic Spark Plugs: <http://www.supersonicspark.com/>

## **COOLANT TEMPERATURE SENSOR CTS**

Most all fuel injected engine have a coolant temperature sensor CTS (see illustration & instructions below) and some have a separate intake air temperature IAT sensor (see instructions below). These sensors can be leaned out by upping the temperature that the computer sees (not your dash gauge) by installing a resistor in parallel to the sensor wires. Our testing has found that installing a single pull single throw on/off switch eliminates cold start problems that the installation of the resistor produces. Make no mistake about it, if all possible computer components are not addressed properly for leaning out (fooling the ECM computer) the computer will eventually override single fixes and undo them after several weeks of driving, rendering the fuel mileage increase to null. Detailed instructions come with all purchased computer enhancers (and OUR enhancers come with detailed instructions that can be downloaded from this page) and these adjustments involve trial and error fine tuning until you get it just right or the check engine light might come on.

## CTS Coolant Temp Sensor

Resistor added in parallel



Single pull single throw on off switch used in circuit to take resistor out of circuit on cold startups, then back on after a few minutes of running

### CTS Sensor

Most of the world uses similar resistance values to equate a given temperature. The Ford based systems (including Mazda, Infiniti, and Jaguar) use much higher resistance values. This is important to know when selecting resistors. If you have a scan tool available to you, use it. Monitor the CTS temperature that the ECU sees. With your engine at operating temperature, check to see that the temp reading is close to the thermostat rating. If it is, proceed. If it isn't, check your cooling system for contamination or stuck thermostat. You may need to do a coolant flush or repair before proceeding. Assuming you are getting reasonable numbers, try different resistors across the CTS to raise the temp reading about 10° F (for example, from 195° to 205°). Even though higher numbers will work, you will most likely run into cold start issues beyond the 10° offset. The average vehicle will use something like a 3.9K ohm resistor. Fords may like a 5K ohm or larger value. (a 7.5 K Ohm or 10 K Ohm "trimmer" or trim-pot may be useful to find the ideal point)

If your cooling fan runs continuously with your setting, add more resistance to lower the temp reading. Any mileage gains from the hotter engine signal will be more than offset by the additional load on the alternator. If you have a rear-wheel-drive with a belt driven fan, you can still add too much temperature offset. The ECU has an internal cooling mode. After the engine overheats to a point, the ECU starts dumping copious (plentiful, rich) amounts of fuel. The excess fuel will evaporate, thus cooling the engine from the inside. However, at this point your mileage literally tanks.

## **INTAKE AIR TEMPERATURE SENSOR IAT**

The IAT is less sensitive to cold start issues. You can add more temp to this signal than you can to the CTS. Just keep in mind that you are not only lowering your lean-out limits, you are also retarding your ignition timing. If you put a timing light on the engine as you adjust IAT values, you won't see the timing change. The timing changes under load. Hotter air is more prone to detonation. This is why the ECU retards the timing.

If you are tuning on the hottest day of the year, you may find out just how high of a signal you can generate before setting codes. Typically it is in the 240° F range. If you are tuning in the middle of February, then you can offset the signal from your base cold reading and things will be fine for now. Come June or August, this setting may be high enough to trip codes. Allow for this when tuning.

## **KEEPING THE HHO GENERATOR COOLER & MORE EFFICIENT**

*Click: [http://www.labellasautorepair.com/manuals/pwm\\_instructions.pdf](http://www.labellasautorepair.com/manuals/pwm_instructions.pdf)*



While the Dry Fuel Cell will produce sufficient hydrogen output, pending the correct electrolyte mix, and run within heat tolerances, adding a PWM (pulse width modulator) will definitely improve the temperature control and HHO production more efficiently. Why? Because you can control the amperage draw below maximum limit it is capable of drawing. For example, if the unit is designed to run between 12-18 amps and the unit draws more than that, adding a PWM you can tune it down and can keep the amp draw within the specs, keeping a thermo runaway in check. It also changes the voltage wave length which is conducive to better HHO production.

NO WARRANTY is expressed or implied concerning the use of these devices for any particular application. Use of these devices is at your own risk. These devices are not intended for use in violation of State or Federal law or regulations. Compliance with any State or Federal laws or regulations is the responsibility of the buyer.

We are not responsible for how you use this device. Please read disclaimer *Click:*  
<http://www.labellasautorepair.com/disclaimer.htm>

### **BUT WON'T IT VOID MY CAR WARRANTY?**

We get this question all the time. The answer is simple:

Your car or truck is being damaged right now by UNBURNED FUEL! Our technology will help not only eliminate carbon deposits caused by unburned gasoline - but will ACTIVELY clean out your engine every time you drive. Over the first few weeks you will notice that the engine becomes smoother and smoother. Then it will level off at a new level - at which the engine continues to STEAM CLEAN itself.

Your new Dry Fuel Cell makes the engine quiet, and calm. The engine stops knocking or "pinging". The water changes the combustion cycle into a more even or "round" cycle. This happens IMMEDIATELY upon installation and from that moment on, your engine works in a new way. The effect is not only less noise, it also has less vibration, resulting in reduced strain on the transmission (thus smoother gear shifts), cleaner pistons and valves, and generally better engine operation.

Water cools down the engine. For years, heavy trucks have been using water injection systems that cost up to \$15,000 to cool their engines. Truck owners are very sensitive to maintenance expenses and they know from years of experience that water reduces their breakdowns and overall operating costs.

Our Dry Fuel Cell system will widen the torque range and make vehicles accelerate faster. After acceleration, you don't have to press the gas pedal as much to keep going. Trucks pull better uphill with HHO Gas. Would you say that less strain on that Detroit diesel engine must result in less wear and tear over the life of the engine?

EASY UNDO: Our technology does not change your vehicle's engine or computer, so if you ever decide that you don't want this system, you can unhook it in less than a minute

and your engine is just as it was - only cleaner!

## **CLEANING THE DRY FUEL CELL**

You will need to do some maintenance on your Dry Fuel Cell from time to time in order to help make it last. Keeping your Dry Fuel Cell clean is an important factor and it's a very easy process. First you take loose the outlet side of the cell and let it empty into a pan or bucket. Take the cap off your reservoir/ bubbler and let the water drain out. Once the water is drained out you will want to flush the unit.

(Important Note) Be sure that you drain the unit before flushing. Depending on what type of electrolyte you're using, adding the flush mixture could cause a chemical reaction. Once the water has all drained out of the unit, mix 1/4 cup of bleach to one gallon of water. Then pour the mixture into the reservoir.

Let this flush through the system. This may take some time as your cell is gravity feed. Once all the mixture stops running out of the outlet tube, you only have one step left. Run another gallon of clean water through the system and you're good to go. Reattach the hose and fill the unit with the electrolyte mixture you're using and be sure to use distilled water. You can refer to the illustration for the bleeding procedure aforementioned for the hose that needs to be disconnected for this cleaning.

We invite you to test this technology for yourself just like we've done, and just like 1000's of vehicle owners and fleet managers from around the world have done.

Thanks again for purchasing one of the best Dry Fuel Cells on the Market.  
READ DISCLAIMER, *Click:* <http://www.labellasautoreapair.com/disclaimer.htm>