

The Car that Runs on Water Alone:

In July 2005, an American mechanic released the details of his simple conversion system which allows an ordinary car to use water as the only fuel. The details are as follows:

The car, which he runs on a daily basis, is a restored, eight-cylinder 1978 Chevy 'Camaro' with stock 350 (5.7 litre) engine, no computer controls, automatic transmission, stock 4-barrel carburettor and stock fuel pump. The fuel tank has been replaced with a metal water tank with the filler cap vented to release heat and pressure. The exhaust was replaced with a new 2 inch pipe which is ducted into the water tank. The water tank has baffles inside it which also muffles the exhaust noise. The stock exhaust manifolds were used, but they will rust on the inside - custom stainless steel pipes would be best but these were not used due to their cost.

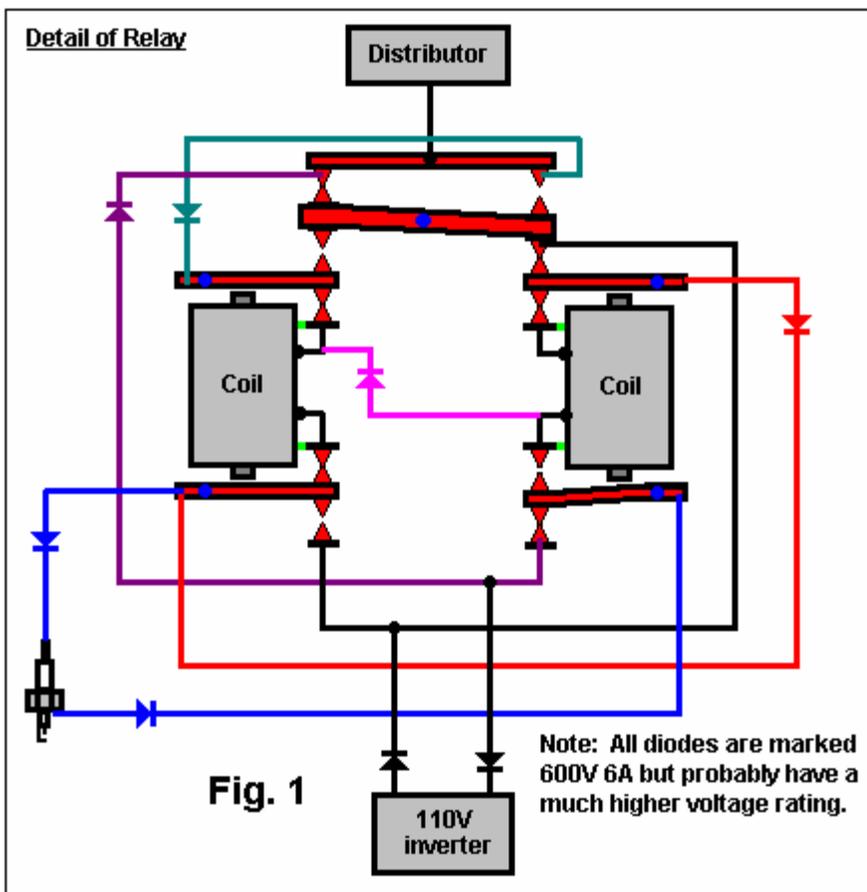
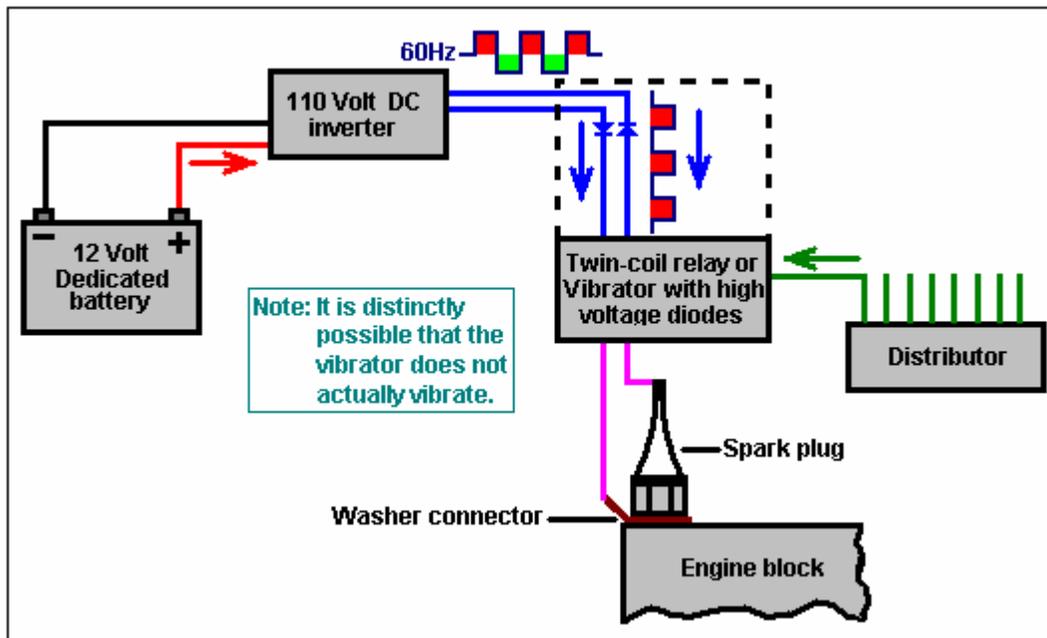
All of the stock ignition system is used and no changes have been made. A second battery was placed on the opposite side in the engine compartment. A 400 watt (800W peak) 110 volt 60Hz DC inverter was placed in the engine compartment on the passenger side and a fresh air duct located behind the grill directs air into covers placed around the inverter to keep it cool.

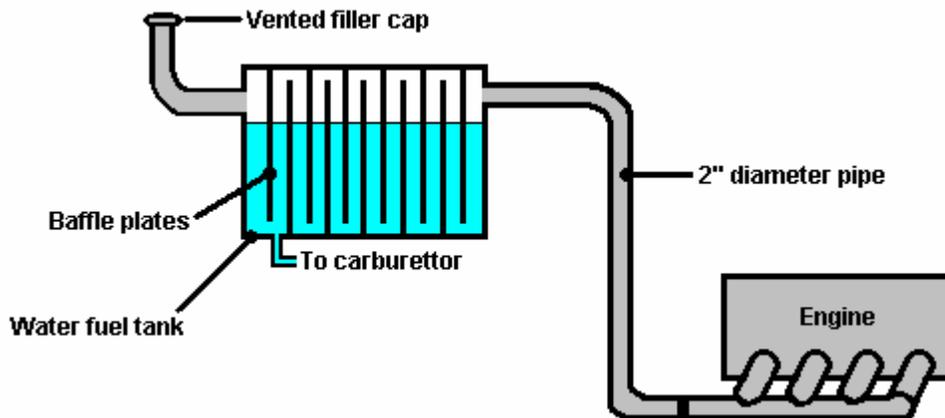
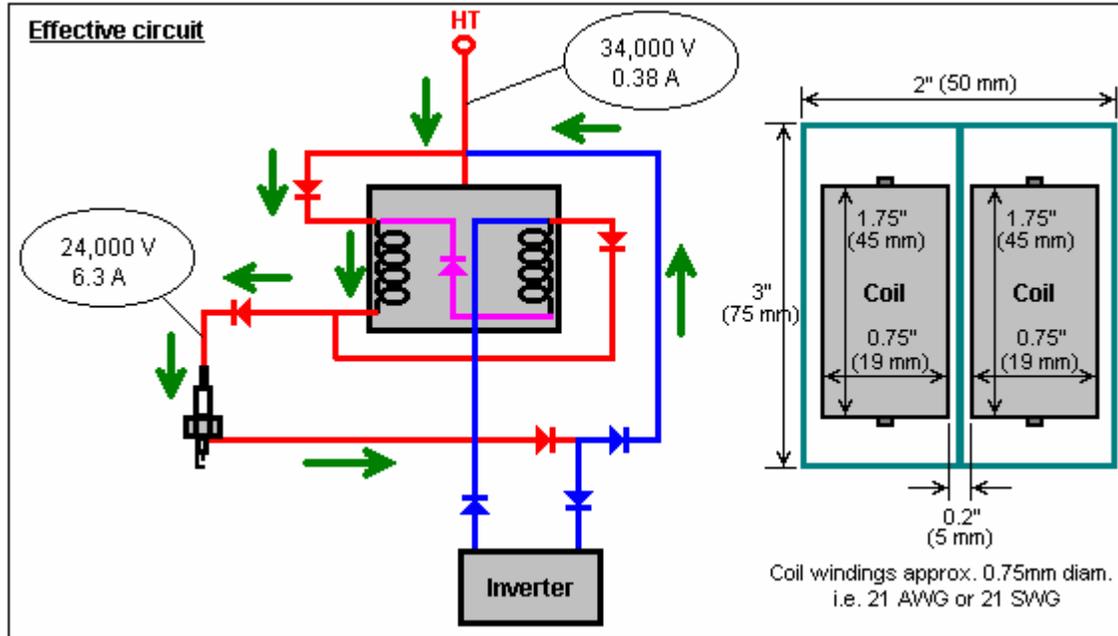
When the ignition switch is on, a relay turns the inverter on, the relay lead contains a 20 amp in-line fuse. This relay only turns the inverter on and off and has no other function. The inverter is connected to the battery via a positive wire and a negative wire (not the chassis). The inverter is not grounded to the car at any point and instead, is carefully insulated to ensure that accidental grounding never occurs.

The wire which would normally go to the spark plug is replaced by a wire which is taken to a box containing one pre-war mechanical vibrator per cylinder. Each of these wires drives its own dedicated vibrator, the current energises the relay coil but the other side of the relay coil is left unconnected. The wiring arrangement is shown in the diagrams below.

It is important that the electrical feed to each plug is fed via one wire to the plug cap and a second wire connecting to a washer clamped under the spark plug. This wiring is repeated for each of the spark plugs. To emphasise this, each spark plug should have two wires running to it, one to the cap and one to the washer clamped between the body of the spark plug and the engine block. The wiring is done with "12-2" wire which is 2-core solid copper wire American Wire Gauge size 12 which has core diameters of 2.05 mm giving 3.31 sq. mm. per core, the nearest SWG size is 14. The under-plug washer can be made by bending the end of the solid core into a circle of appropriate size and then flattening the wire slightly.

In the vibrator box, the vibrators are positioned with a one-inch gap between them. It is important that the physical construction insures that all of the high-voltage connections are fully insulated should anyone open the relay box when the inverter is running. The batteries used are deep-cycle types with high cranking current ratings – this is important because the inverter must stay on when the engine is being started and it will cut out if the starter motor current drain pulls the battery voltage down excessively. The alternator is the stock 95 Amp type and it charges both batteries simultaneously. When the engine is started, the vibrators are heard clicking until the cylinders fire and after that, no sound can be heard from the vibrators. It is distinctly possible that the vibrators take up a fixed, immobile position when the engine is running. The diagram below marked 'Effective circuit' is based on that assumption, and it should be stressed that all of the diagrams are only what I understand from the information provided to date.





The engine timing has to be retarded for the car to run off water. This adjustment should be made to the point where the engine runs the best and this is likely to be different for each make of engine. The Chevy 'Camaro' engine runs best with the timing 35° retarded. The spark plug gap used to be 65 thou. but is now set to 80 thou. (0.08"). The plugs used are the cheap 'Autolite' (25) copper core type. Using carburettor jets two sizes larger than normal, allows the engine to produce more power and rev higher than tick-over.

The engine tends to knock when first started from cold but it is likely that this can be overcome by using a heater on the water feed to the carburettor, raising the water temperature to say, 120 degrees Fahrenheit and fitted with a thermostat to disconnect the heater when the engine reaches its normal operating temperature. This car has been run 30,000 miles on water alone and covers some 300 miles per gallon as much of the water vapour in the exhaust condenses in the water tank.

The disadvantages: the car runs with slightly reduced power and the exhaust system will rust unless stainless steel replacements are used.

The inventor of this conversion wants to go on living a quiet life and does not want the nuisance value of high levels of interest. Consequently, he wishes to remain anonymous. He says: "I didn't build this to sell or to get a patent on it, or make big bucks from the information. I did it because I could and I did. The only thing I can add is 'just try it'.

Some points of note:

A car with this modification produces NO carbon dioxide and NO carbon monoxide, but since air is mixed with the gas combustion, it is likely that the greenhouse gas Nitrous Oxide is produced. But Nitrous Oxide dissolves reasonably well in water, so since the exhaust gasses are passed through the header tank which contains the water fuel, it is likely that this engine arrangement is a good deal greener than most.

The vented filler cap arrangement will not suit many European car designs which have a locking flap covering the filler cap. For these cars, it would probably be better if the gas exiting from the water tank is passed through a normal exhaust pipe, and the filler cap be a screwed airtight fitting.

Excerpts from the Yahoo 'watercar' and 'egaspower' groups mail about this modification:

s1r9a9m9 (the inventor of the modification):

" Hi " I'm new to the group and I think this might be of interest to the group . I tried to put this in the 'Files' section but it wouldn't accept it there, so I put it in the photos section under 's1r9a9m9'. There are 7 pages. You should be able to print off the pics with no problem. I built this car and still drive it. I will be around now and then to answer questions if I can.

With the right arc inside the engine cylinder, water will expand very quickly pushing the piston down with more force than gasoline can . This is not a steam reaction and the hydrogen does not have to explode to achieve the reaction needed. I did it with 110 volts at 20 amps per cylinder. I have placed some files in the photo section here.

The car is driven daily and I have had no problems so far. The egaspower group has the pages in the 'Files' section. Their link is in the 'Links' section here. There are other posts on that group about the way that I changed the car over.

The coil is in the top of the distributor cap as any stock elcamio 350 engine has. The inverter does not put out full load at all times, it only uses what it needs, this is never the total of the power of one battery, the second battery is for the other stuff on the car but both are used in the whole system as needed .

Ah yes the cheap Auto Zone coil: put one on our jeep and cost \$110.00 towing plus the \$28.00 for the coil. If you're going to use a good coil use a MSD ? (MDS). These coils will give out a triple spark at 80,000 volts and 2.83 amps. These are killer coils and they make ignition modules for vehicle too. Buy cheap and stay cold - just buy the good stuff to start with.

The Bosch Platinum plugs have stranded about 50 people that have brought their cars to me to repair. I don't recommend these either but maybe there is a good one out there somewhere. I am using cheap AC plugs in the water car and only replace them every two months, if needed.

I did tell Brad NOT to use the 110 on the auto coil it will blow up because it was designed for 12 volt use only. The coil fires the relays only. An earlier post suggested that it may be piggy-backing to the plug as well. I don't know about this, I don't have the equipment to chase the fire down.

Most automotive coils fire a voltage around 28,000 to 48,000 volts at 0.87 amps. Simple one this: call a parts dealer and ask the voltage on the coil for your vehicle and see what it is.

Crunching numbers is a way to tell someone how close to get when they are trying something new. BUT once they have got it to the point where it will run, the numbers will change a bit and slight changes made to make it run better. The numbers will change for each application. As with my car, the coil will put out 48,000 volts at 0.87 amps, BUT when in use it only puts out 35,000 volts at 0.85 amps. The heat of the engine makes a difference as well and will increase or decrease the numbers.

Grounding at the base of the plug ends the 110 at the plug, it does not have to travel through the body to get to where it is needed and there is no static on the radio either. If you use the positive as ground you will short out the 12 volt system burning out all electrical wires in the vehicle.

I'll make it simple to understand: the ground is at the plugs. The inverter is not grounded to the car. The relay box is not grounded to the car.

Battery+++++++Inverter+++++++Relay Box+++++++Plugs

The inverter is grounded by the connection with the battery wires only, the 110 volt is grounded at the spark plugs.

Trying to crunch the numbers to make it work on paper has confused a lot of people here. I didn't draw a picture of this before I made it work, I just put hands on work to it and did it. I drew the picture after someone here asked for one. If you really want the numbers, then you need to build one and then reverse-engineer it and write down the numbers you want, but the next person who builds one will have a different set of numbers that they came up with on their project. So this will be the only way to get the big oil company's involved, confuse the masses as always. It works, it isn't for sale, the info is free. To copy it, you will need to get your hands in grease and oil and build one for yourself.

The only things that are not grounded to the car are the inverter and the relay box. All of the original wiring is the same as before with nothing changed. Just an extra battery on the other side of the engine compartment, and connected to the other battery. I have a well at a spring head where we get some of our water. I have used city water in it as well; no difference in it.

I tried a high-output coil but for some reason it didn't work. The 110 volts at 20 amps arcs better than the 12 volt 0.87 amp system on the plug. Don't know the math to it, but it works well.

The fuel used is just water. The inverter should be 750 watts or larger. I'm not sure about your donor car. Does it have a computer or smog controls on it? This stuff is not needed. You will need - A manual fuel pump on the engine. This helps heat the water some. A carburettor that allows the jets to be changed - they need to be two sizes larger. A points-style of distributor helps but any type will work provided that it is not computer controlled. I had a Fiat 600D years ago, it was a 1962 model. It would have been a good donor car.

I use a small bottle of baby oil in the engine when I change the oil, and a little in the carb before I let it sit longer than 2 weeks. Ever see rust on a baby's butt? The intake vacuum of the engine helps oil the valves and helps prevent rust as well.

A simple connector can be made if you bend the 12-2 wire in a curve around the plug's base and then flatten it with a hammer a little, so that it will hold its shape when you tighten the plug. Some plugs don't come with the washer that goes under them. Why would you need a computer on a car to control the engine if you use water as a fuel? The extra amps is the main part of how the systems works.

As with any power supply load, the shorter the distance travelled the more power is delivered to the load. This is why each plug is grounded at the base. When the relay sends power to the plug, it makes more sense to have the ground at the plug than have the ground on the other side of the engine where it would take extra time for the current to travel back to the plug. This would offset the timing even more and make for delayed reaction on acceleration of the vehicle.

The vehicle is 12 volt grounded with a 12 volt electrical system and has very little distance to travel. If the 110 volt is also grounded to the 12 volt then there would be feedback and the engine would not run. The relays provide the time lapse for the 110 volt not to be continuously grounded to the engine, this delay prevents the 110 volts from overriding the 12 volt system in the rest of the vehicle.

I would be happy to provide photos of my car, but only if my well-being and safety is protected. People here know my name, so my address is public info. There are people who are waiting for me to make the mistake they need to start their dirty deeds towards me and my family. There would not be much to see in pictures anyway as the only thing you would see in the engine compartment would be the two batteries, the relay box and the cover which helps to cool the inverter, Everything else is stock stuff.

I have avoided some questions because it would involve sticking my neck out. The info has been free, detailed, and even some new ideas accepted on my part. I didn't give up on the car, so why should I give up here? I will continue to help as and when I can, but no photos will be posted showing any part of the car - the car has been in car shows, so you can see that people would know who to call and bother.

The info I have given is enough to build the conversion and make it run. There has been some good input and ideas given to help improve this system. The maths level needed to do this conversion is $2 + 2 = 4$ it is simple to do - just do it. I don't have any further information on the relays which I used.

If you want to experiment, then you must try the experiment under pressure with the pistons in motion. The compression in the cylinders is 165 to 180 psi. in each. The engine turns over 4 or 5 times before it starts. Repeated compression and the right amount of fire in the hole and it will work.

This is not rocket science, it's simple hands-on work. Understanding all aspects of how it works is not needed. Not every one has a donor car, but your friends or co-workers may have one, any car that fits the profile will do. If you need info on the change-over of your donor car just ask.

The Camaro has a computer on board, I have one with a V6 vortec. The Mustang will be the better bet as the car won't need to be modified. Just print off the diagram and use the parts listed. Don't change the fuel tank or exhaust at this point in time. Just hook a hose to the fuel pump from a separate tank of water, you won't have to mount anything on the car either.

Hook up the inverter, then the relay box and finally, run the wires. Do make sure that neither the inverter nor the relay box get grounded to the car anywhere except at the battery connections and the plugs. Check the plugs to see if they are clean and clean them up if they need it. Good plug wires help too. Just to get running, you won't need the second battery. The only thing to change is the timing, just turn the disc. cap until it starts. You don't need to change the jets now, it will idle but won't rev at this point. You may need to adjust the jet screws to allow more water into the engine. See - no major modifications needed to test it, are there? As I said, it is simple.

A good inverter only costs \$50 - check at Wal-mart. The relay brakes contact on both wires from the inverter. Mark the disc. cap before you move it so you can reset it if need be. The water in the engine will not be enough to hurt it, you can always put it back on gas and run it for a while. Quacker state motor oil draws water into the engine to help cool the oil down faster. It always leaves a milky gunk in the valve covers. If it does lock up, just take the plugs out and turn the engine over.

OK, I ain't perfect. I found the info on the inverter I used on the car. I put a file in the 'Files' section, with pictures of the book that came with the inverter. The one I used was a 400 watt with 800 peak watts, NOT a 750 watt as I thought I did. Sorry about this mistake - I used the 750W on my work trailer for a power outlet at job sites.

My son works for a power company and took one of the relays in for a test. He told me I had it hooked up wrong on the car, and it shouldn't work as it is hooked up. He then ran another test and found that the relay was boosting the amps from the disc cap to the plug. The coil output on the car is 34,000 volts at 0.83 amps; the power at the plug is now 24,000 volts at 6.3 amps. The inverter and the relays reduce the voltage and increase the amps to the plugs. The spark advance in the disc., keeps the engine from passing the firing zone when the engine is running, it locks in place because of the time setting. It was a lucky mistake that I happened to find the right wiring to make the car run like this.

The relays have double feedback diodes in them rated at 1800 volts ac. This is why there is no feedback to the inverter. They also have a double coil with locking contacts under load. The 4 or 5 turns of the engine when starting, is when the coils get charged and change the voltage and amps to the plugs. Once the coils charge, the contacts stay closed and the coils stay charged.

The power is in one direction through the relay but the 110 volts is incorporated into the voltage from the disc cap when they go to the plugs. The relays make no noise when the car is running. You can hardly hear the fan on the inverter. They do click a few times when starting the engine from cold, but they stop once it starts up.

The high voltage goes in at the top of the relay and the 110 goes in on one side. The 110 charges the coils in the relay and then it's on stand-by to keep the coils charged when needed. This charge in the coils, changes the high voltage to a lower voltage and higher amperage as it passes through on its way to the plug.

The sides of the relay were removed so it could be used in another project. I don't know why it works this way, but it does. When my son drew this up, I had a few questions for him as well. Why the 110 floats is uncommon, but it does, and the high voltage passes through without interfering with the 110 stand-by. The hv has no place to arc inside the relay as it has heavy insulation around all wires and the coils.

It is evident that the 110 ground is at the relay, and not at the plugs. The relay is the load. The hv connects with the vehicle ground and grounds at the plug. For some unknown reason, the system will not work without the ground wire for the relay running to the base of the plug - I knew I should have taken that class in rocket science! A meter shows no reading between the ground wire and the plug base when the engine is running, or as it starts, The engine just won't run without the ground wire being in that position. If a plug is taken out and the engine run, the spark is bright blue with a white flash up to a 1/4 inch around the tip and gap.

Inside a gasoline engine the air and gas are compressed to somewhere between 85 psi and 180 psi in most engines. When the piston is just past TDC the plug fires and the gases explode as the carbon components superheat under pressure.

Inside the water engine, the process is a little different. The water is taken into the cylinder as the piston goes down after the exhaust is released. The piston goes up to compress the water and air. When the piston starts back down, water is on the piston and the head, while the cylinder walls should be clear of water. Just after the piston starts down, (if the timing is set right), a vacuum will form between the water on the piston and the head. Then the plug fires in the vacuum area, creating a hot shock-wave between the water on the piston and the water on the head, most like a dieseling effect.

My engine does not have the power it did have, but it's not that much less than before. The rpms at which my engine turns is not 3000 rpm. When I am driving down the road at 55 mph the engine is only turning about 1800 rpm. Each size of engine turns at different rpms for its application.

Does the water inside the cylinder explode? - I don't know.

Does the water separate inside the cylinder to make a gas, and then explode? - I don't know.

Does the water turn into steam inside the cylinder? - I don't know.

Maybe I should have never posted this info on the net; it seems to have stirred up more conflict

than interest. If you are unemployed, don't waste your money on dreams. Get a job, stabilise your life, and then build your dreams .

The big car makers won't move over to make room for you and your ideas, they will step on you and keep you down. Sure, a car like mine will save you money, but not that much. A tank of gas costs \$28.00 and lasts 1 week, that's \$1,456 in one year. The changes which I made to my car were done using stuff that I had around the shop and help from friends at the welding shop and that's why the cost was so low on my car. Don't spend money on stuff you may not need, there are people out there who have surplus stuff that they will share with you if you ask, or exchange the parts in exchange for some work. I worked on my car for over a year to get it right, it took that long to figure to change the timing. You will run into the same problems throughout the building of the car as well .

This does work, but you need the time and money to spend on it as well. Just because you have all the parts and have it all in place does not mean that it's going to start the first time you turn it over. It is simple to build but to get it right on your car will take time.

As far as I can see, no laws of physics have been broken to make this work. It may be a fine line as to how it works, but that ain't for me to figure out. In the cylinder, on top you have a high pressure, in the middle there is a low pressure, and on the piston there is high pressure. What happens between two high pressures when you add a strong electrical charge between them? - It ain't rocket science.

I and my son are reverse-engineering the relay that I cut the sides off of and we are going to find newer stuff that can be used for the same use as the relay and as cheap as we can. I found a guy who is 85 years old who knew what the relay fit. It operated two pumps on a 1949 Johnson-Prutte air cooling system. The relay was used to the turn on two pumps, when one would start to get hot the relay would switch the power to the other pump before the other shut down, that's the reason for the diodes in the relay.

I'll post the info as soon as we get it together. Since my car is running now, I will replace one relay at a time to test the tech we try. YES, I will keep records of events on this project and take pictures of the stuff needed for the system.

I didn't change any of the stock stuff on the engine. The spark advance still works, and stock HEI coil in the cap is GM equipment. The vacuum hoses were all replaced with new ones along with the base plate under the carburettor and behind the heater controls. I know the timing seems way off on the engine, but that's where it runs the best and the smoothest. Other engines may not even have to have the timing changed, I haven't done that yet.

I thought I would start a new group to help with storage space here. I'll put all my file in the new group. Any one who needs the space is free to join. Here is the address:
groups.yahoo.com/group/WaterFuel1978/