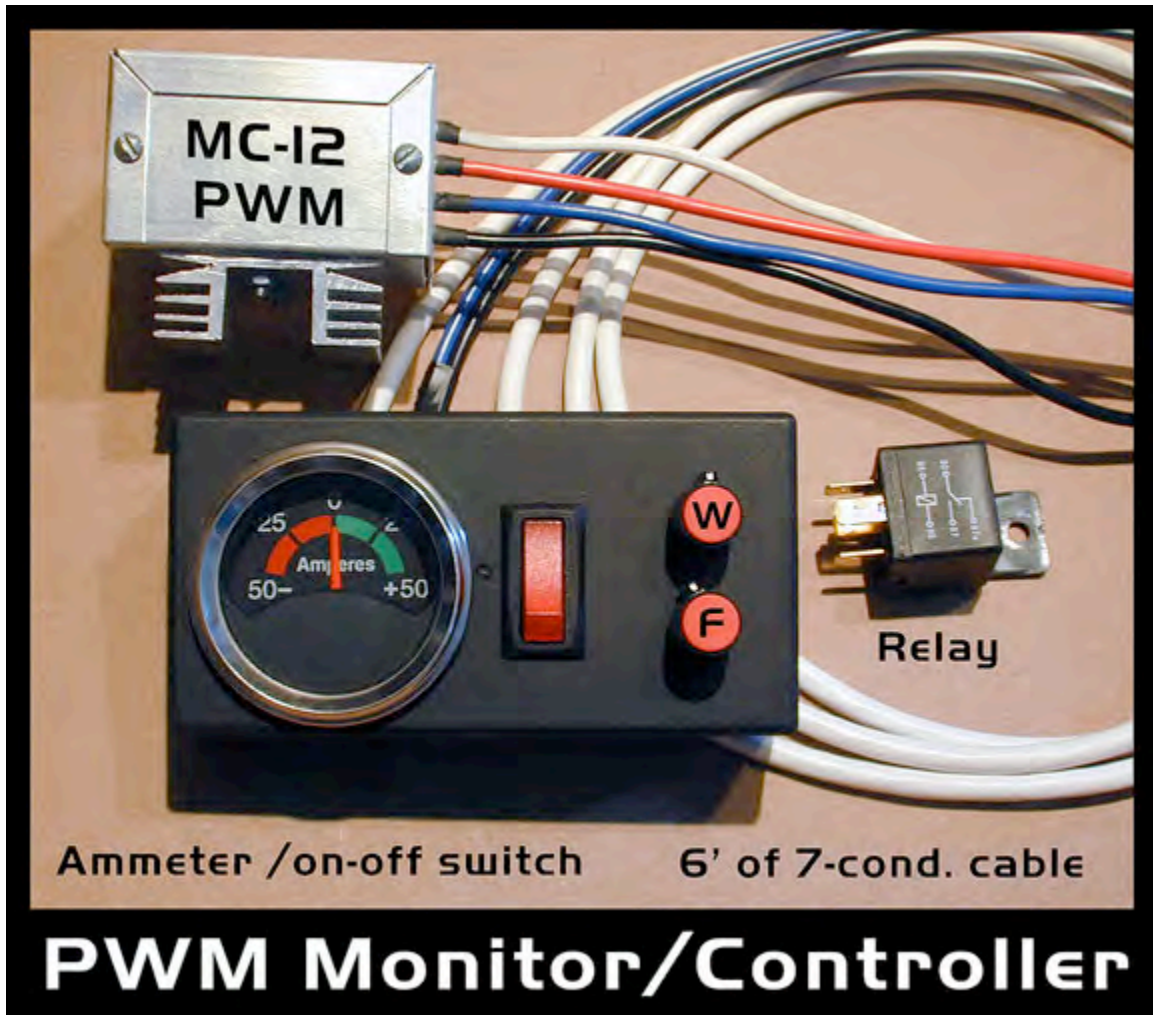


Pulse Width Modulator Monitor & Controller



PARTS LIST

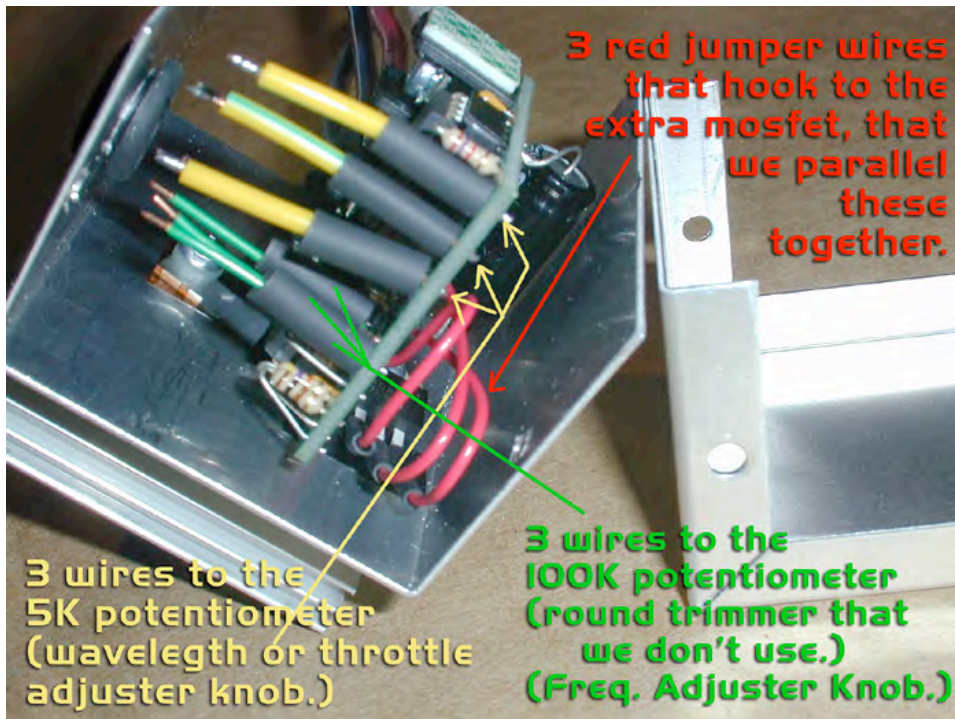
1 - MC-12 CIRCUIT KIT	4 - SPADE CONNECTORS
1 - PROJECT BOX	2 - RUBBER GROMMETS
1 - EXTRA MOSFET	1 - 4" OF HEAT SINK TUBING
1 - MOSFET MOUNTING KIT	1 - 8' FT. CABLE (8 COND.)
1 - 6" OF SPECIAL MOSFET WIRE	4 - WIRES, 18" (RED,BLK,WH.,BLU)
1 - 100K POTENTIOMETER (to replace the 100k trimmer pot.)	2 - WIRES, 12 AWG , BLACK & WHITE (8' EACH)
1 - DC AMMETER	1 - YELLOW WIRE - 6' LONG.
1 - PANEL SWITCH (lighted)	1 - 30/40 amp RELAY
2 - VELCO PAIRED SETS	1 - BRAIN
6 - TERMINALS	1 - TALL GLASS OF BEER

Assembly Instructions

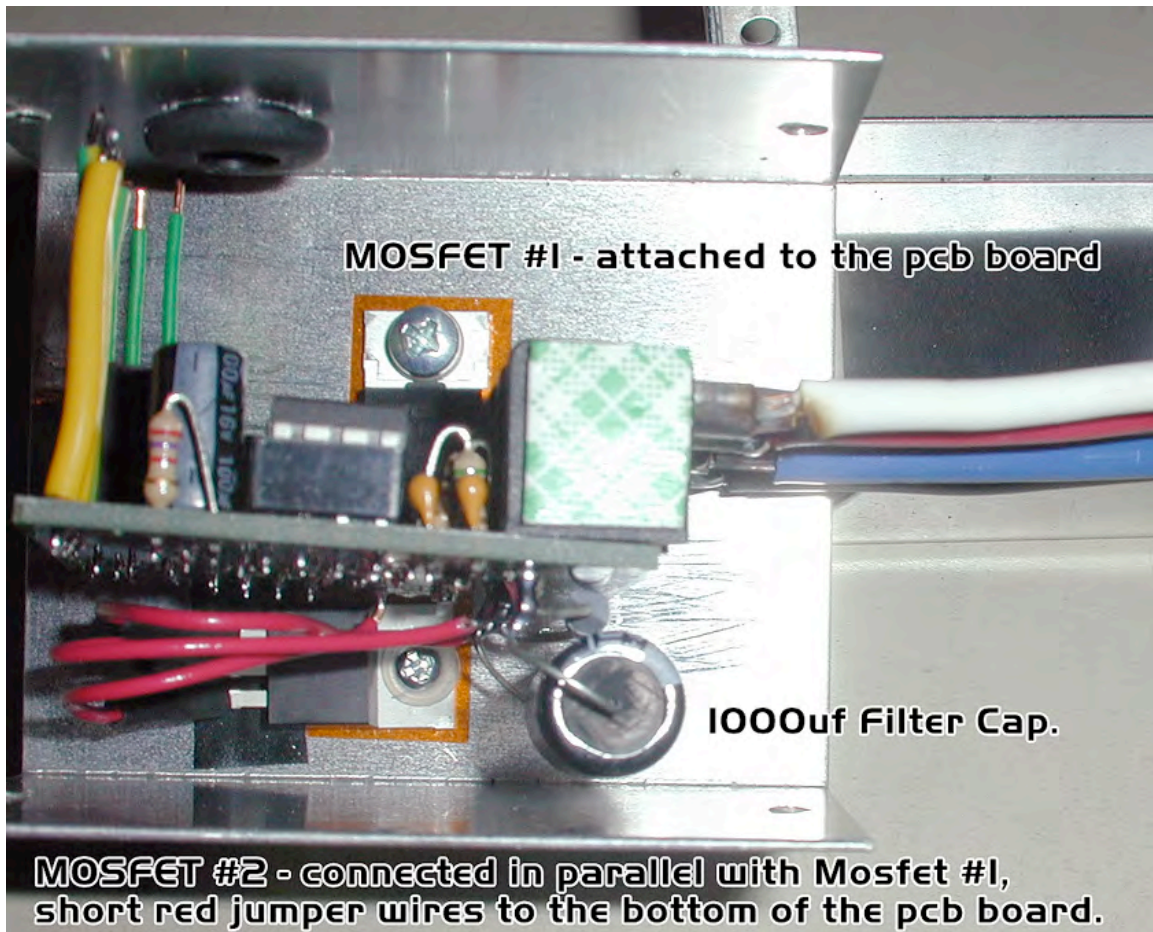
First start by soldering up the MC-12 kit, follow instructions labeled :
"MC-12 (PWM) Circuit" on this page :

<http://hydrogengarage.com/instructions.html>

Remember NOT to solder in the 5K potentiometer, nor the 100K trimmer pot.
Just solder in 6 - 1" long jumper wires from the pot. holes in the pcb board.
Also DO NOT solder in the Mosfet Q4, just yet, see diagram below.



Run jumper wires to the 8 cond. White or Gray cable to the dash board monitoring box. Don't bother reading the instructions, just look at the pictures. The MC-12 circuit will be fitted into the alum. box & heat sink on the outside of box. This alum. box and relay will be placed close to cell under the hood or preferred in front of radiator, behind your car's grill. Coolest spot under the hood. Let the wind and fan blow on this alum. box as the Fets will create heat at higher amperage. (15 - 25 amps) The MC-12 with 2 fets can take amps up to 30, but you will be pushing it. Use a 30 amp fuse, but try to go up to 25 maps. At 30 amps you start melting the #12 & #10 wire.

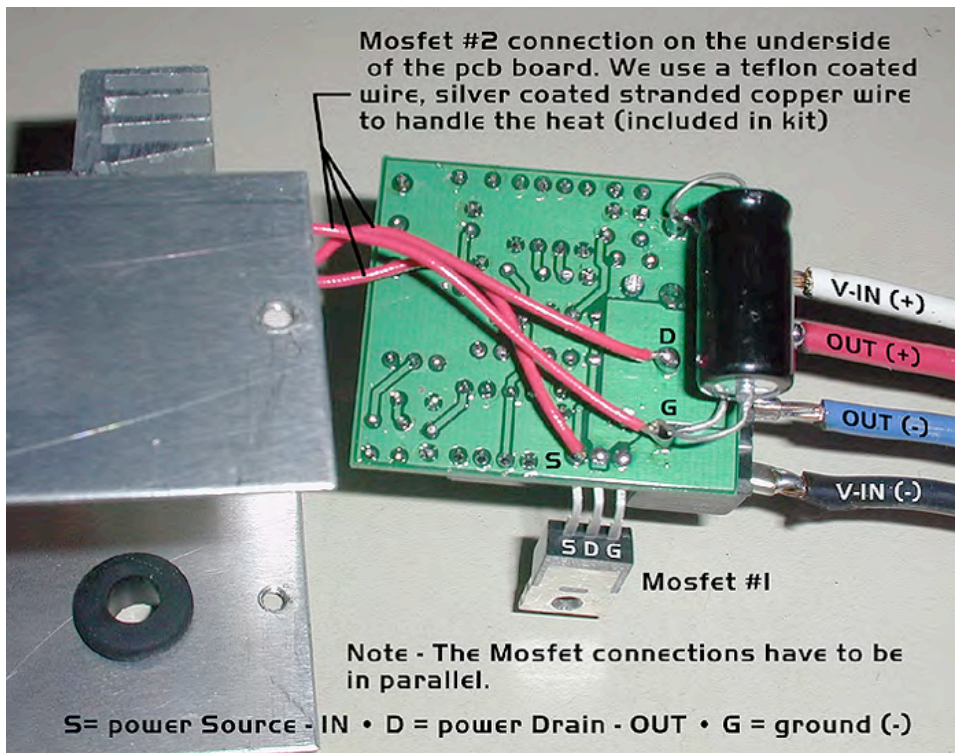
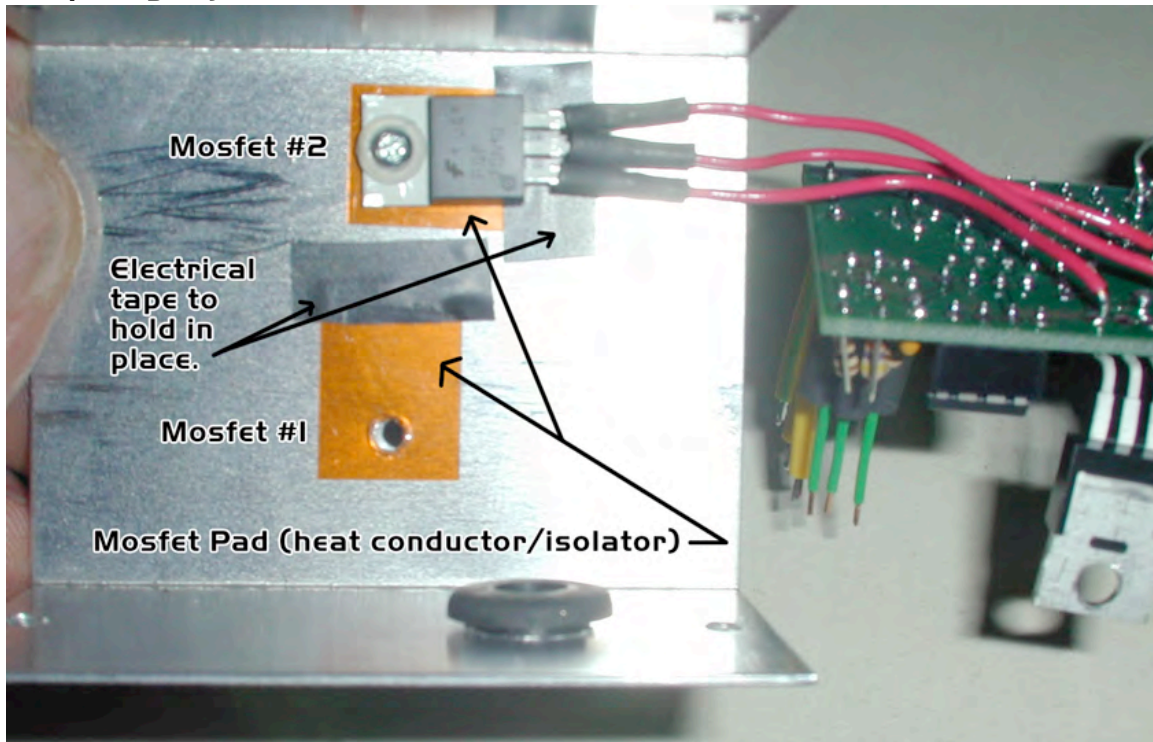


We center the heat sink to the alum. box and line up the already drilled hole to mosfet #1. You will have to drill another hole all the way through the box and heat sink for Mosfet #2 As shown in the photo above. The mosfet mounting kit comes with gray pads, rather than the orange ones above. The Mosfets must be isolated from the alum. box. They are NOT grounded to the box. They are isolated from the alum. box.

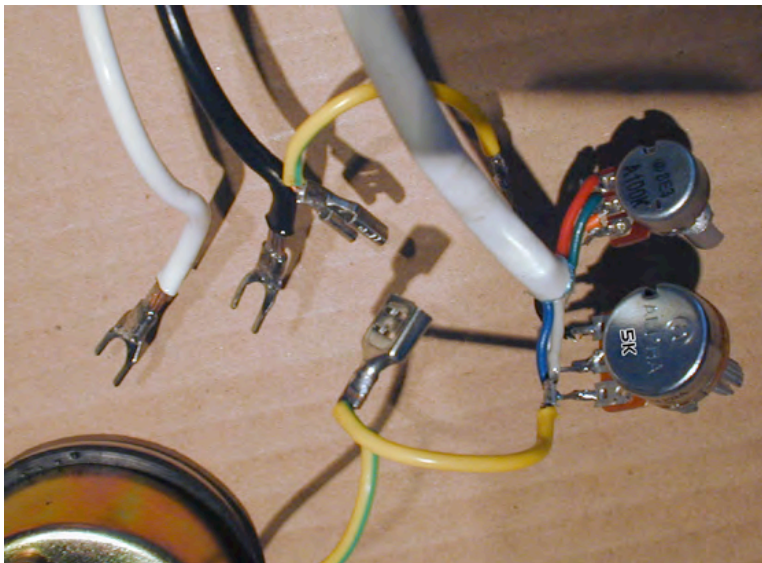
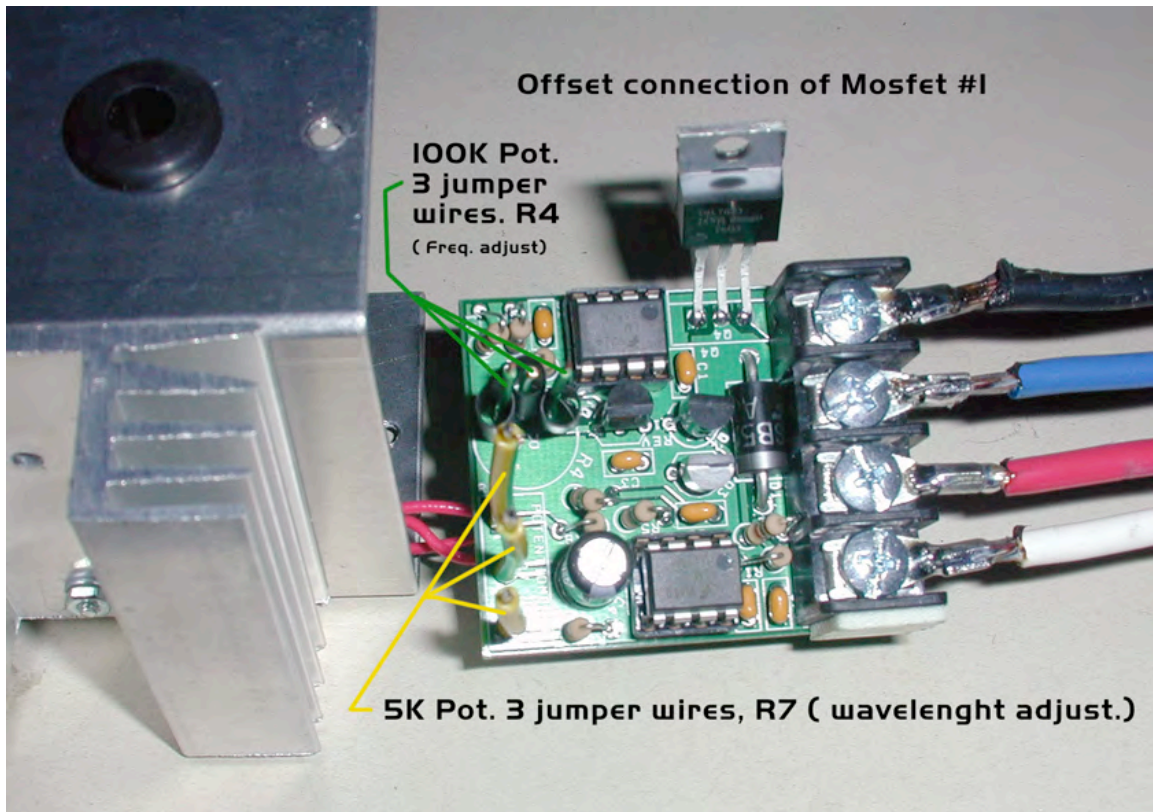
Solder 3 - 1" long jumper wires to R7 for the 3 wires to the controller pot on dash. Orange, Green & Red for R7. For the 5K pot. Please note the wire colors change, due to the cable (8 cond.) 8 wires inside, Different brand cable have different wires colors. Follow the 3 potentiometer wires : (right - center - left) from the pcb board to the pots inside the control box on the dash.

R4 gets 3 jumper wires also - Blue, White/black striped, & Black for the 100K pot. The center tab being the most important, the other 2 sides can be switched, it will just make the knob turn clockwise, rather than counter-clockwise. Best to orient the 3 wires in a row right to left and get it right in

the control box, that way they both spin in the same direction, the “W” and the “F” knob. ‘W ‘ = Wavelength or Throttle adjustment knob and ‘ F ‘ = Frequency adjuster knob.

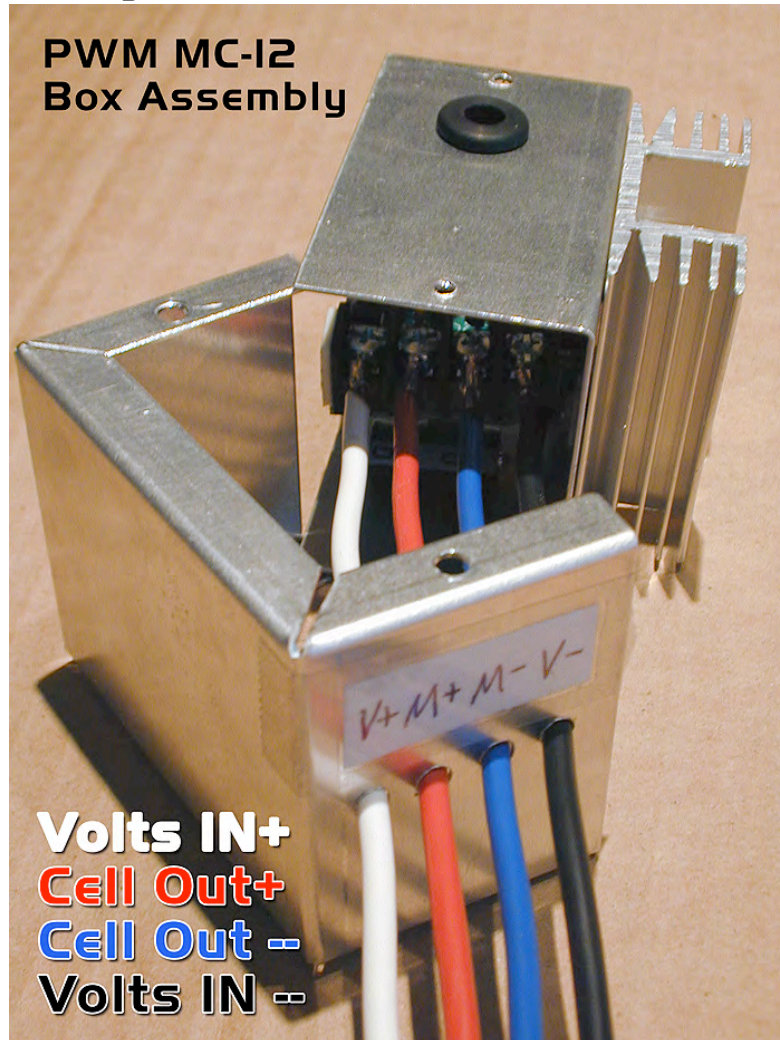


Make sure the Mosfet #2, jumper wires are correct. The Mosfet is upside down in the photo, but SDG is correct as shown. The 3 Terminals are "IN & OUT & GROUND." S = in, D = out, G = ground

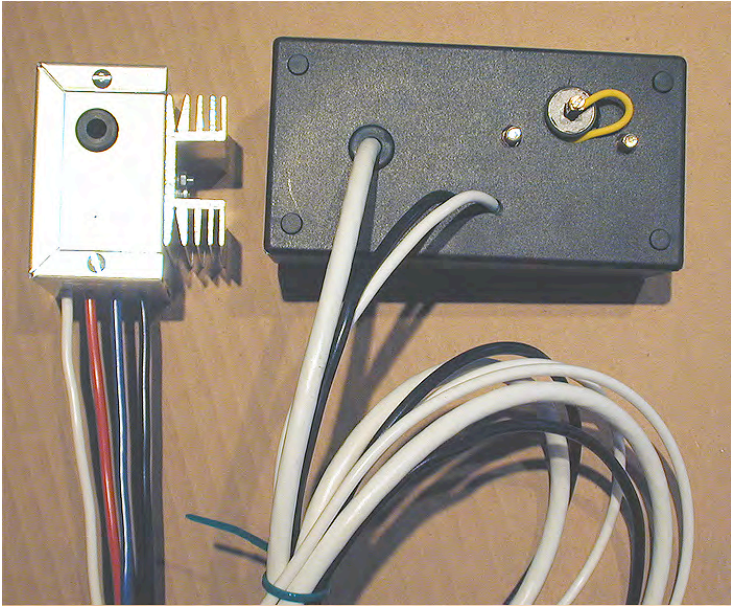


Guess where all these wires go? In the box. This photo is basically useless, but does show the double spade

connector to the center tab of the switch. It gives 12vs to the light for the DC ammeter.

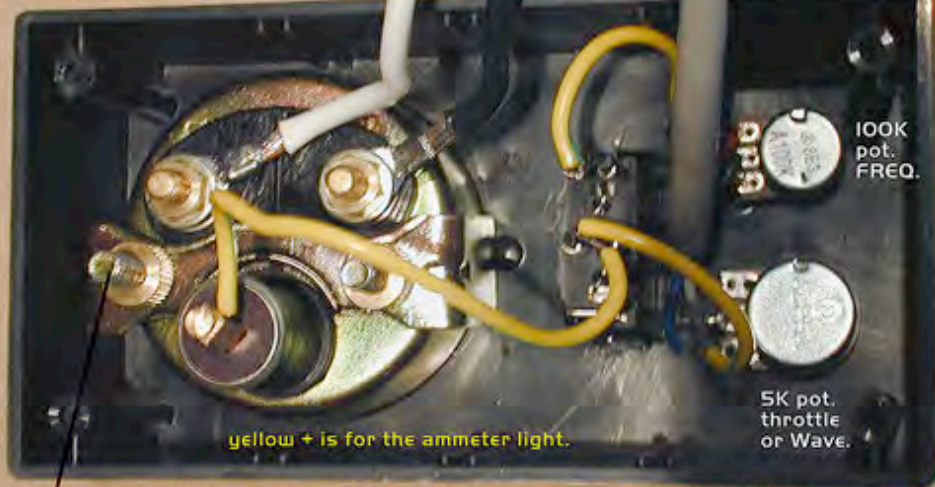


Holes for the wires and cable and rubber grommet insert.
The 3 holes to the left are for the back of the analog ammeter.



The white & black wire in this photo need to be flipped. If hooked this way the dial reads neg. amperage. Exchange the terminals & it reads correctly.

DC Ammeter, white goes to (LOAD) CELL +.
Black wire goes to (BATTERY)
to the Relay, tab #87



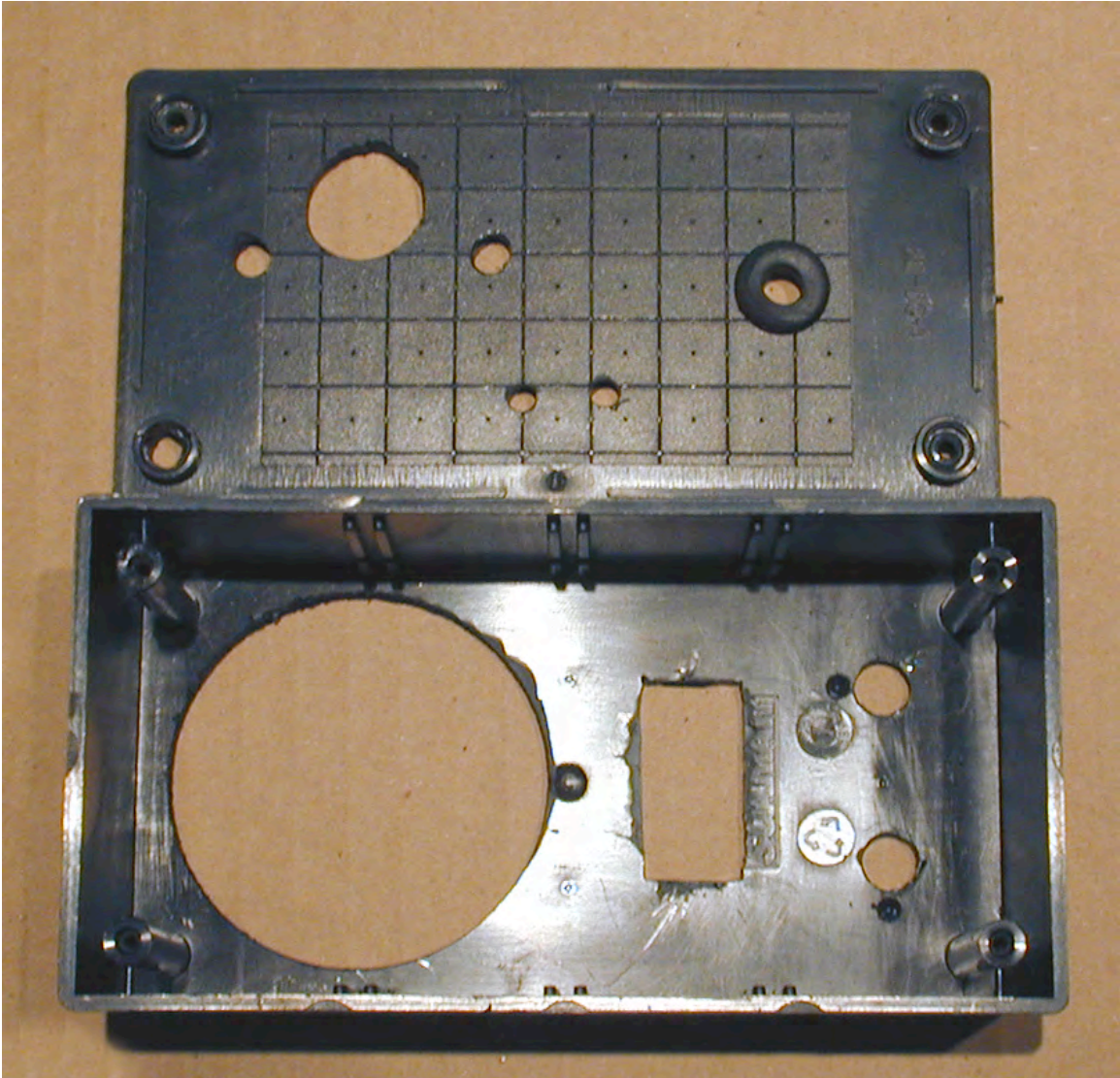
yellow + is for the ammeter light.

A wire to a ground to one of the posts, is necessary to light the ammeter.

Wires inside the cable



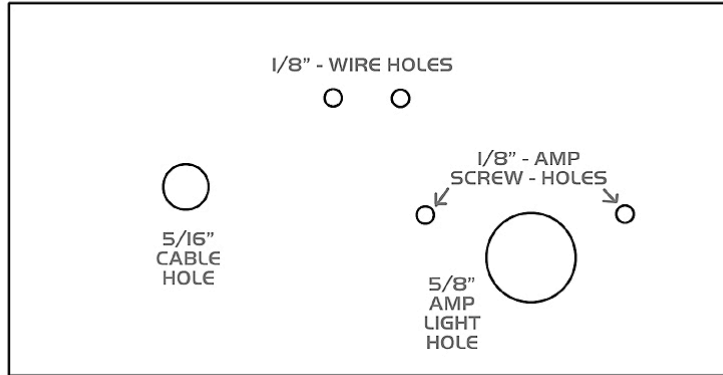
Please note we have changed brand
of 8 cond. cable, and the wire color
code may have changed. 7/09



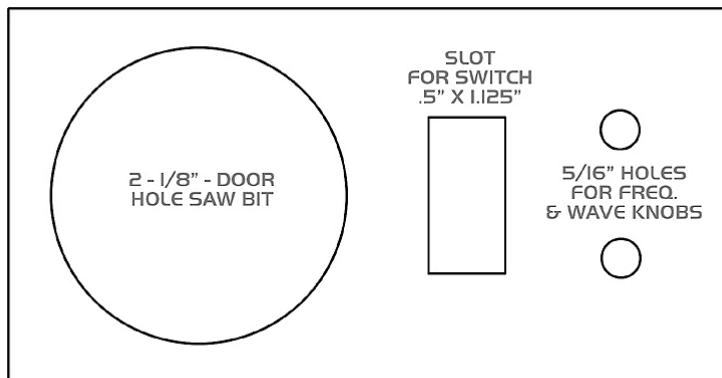
Drill holes for fun and profit. The large hole 2 - 1/8" is a door hole saw. You can buy a hole saw kit from Harborfreight.com for \$5.95. Download the 100% size template at <http://hydrogenarage.com/assembly.html> . Print out that page and cut out the template and tape down onto top of the black box lid & bottom and drill right through the paper and plastic box.

The last page of these assembly instructions is the under the hood wiring. The power to the switch will come from an ignition source either under the dash's fuse box, or under the hood fuse box. We connect the "ignition power" (power that is ON, only when the engine is running or key turned on.) To the relay #86 It can be a light wire as not much current is needed to run the switch. Please note, that the wire to the ammeter and back has to be thick #12 or #10, we provided #12 with this kit. It can handle up to 30 amps, before starting to melt the rubber coating on the wire.

MONITOR BOX - TEMPLATE FOR DRILL HOLES AND CUT OUTS



COVER - TEMPLATE (CUT OUT AND TAPE DOWN ONTO LID)



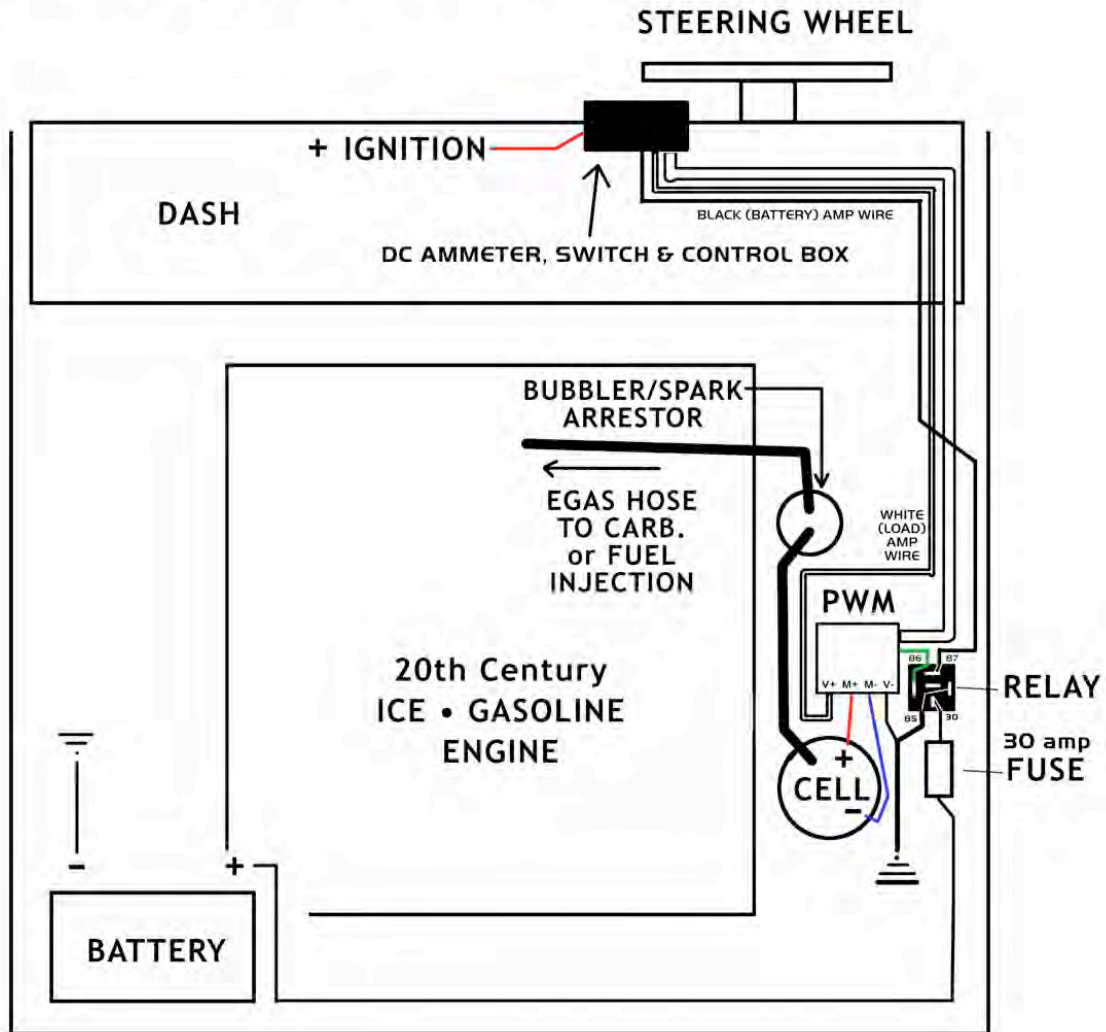
BOX TOP - TEMPLATE (CUT OUT AND TAPE DOWN ONTO LID)

This template is the wrong size, please download the correct size on this page; http://hydrogengarage.com/pdf/Monitor&box_template.pdf

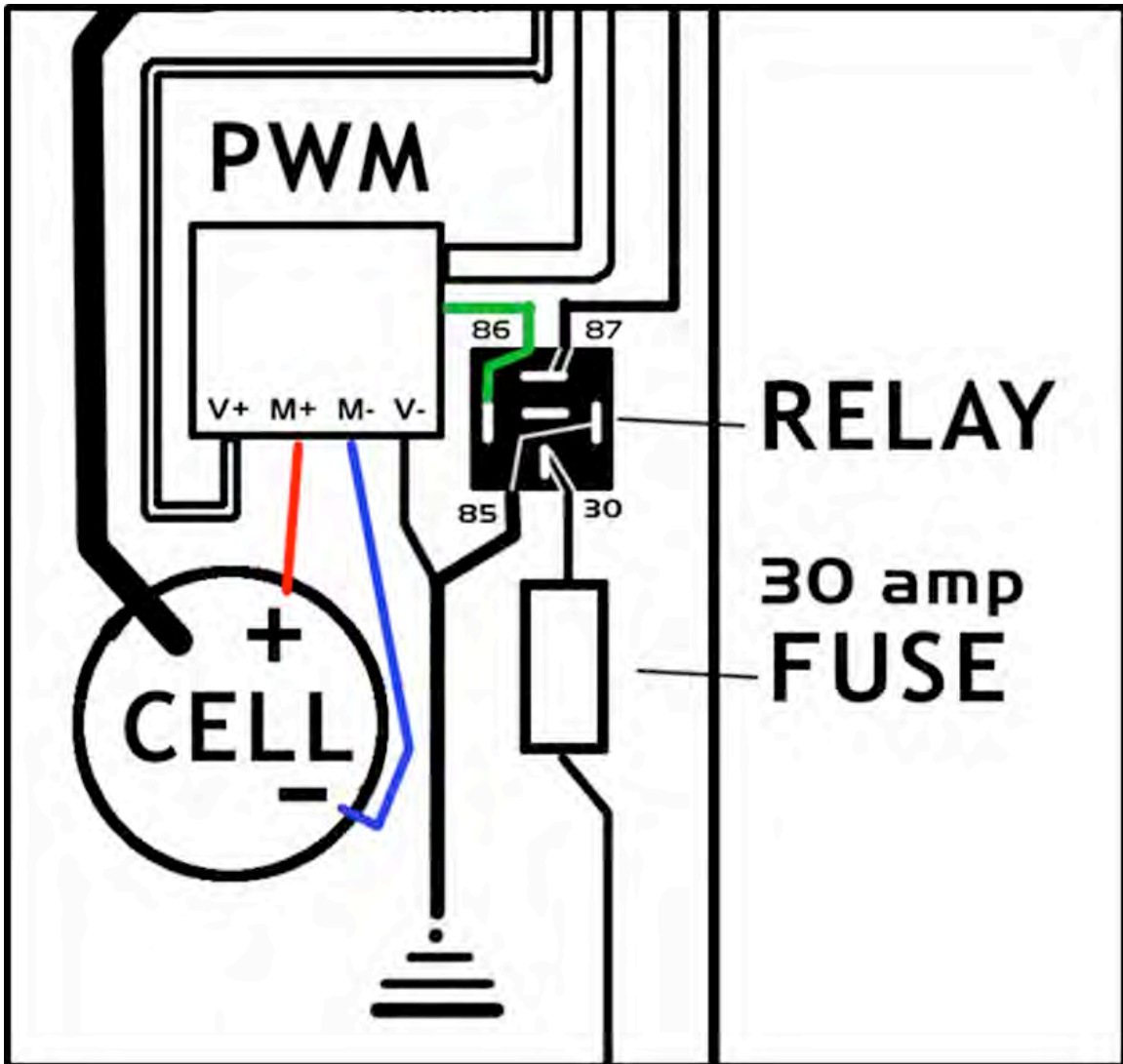
Simply out and tape it down on top of the box lid and bottom of the case. We cut out the switch slot with either a dremel tool or a hot knife tip And a propane torch or kitchen stove, flame top. Don't breathe the burning plastic fumes, could contain dioxins. Drill holes right through the paper.

Next, , , do a little tap dance to let yourself know your doing good. Pat yourself on the back. Treat yourself good, take breaks, pace yourself.

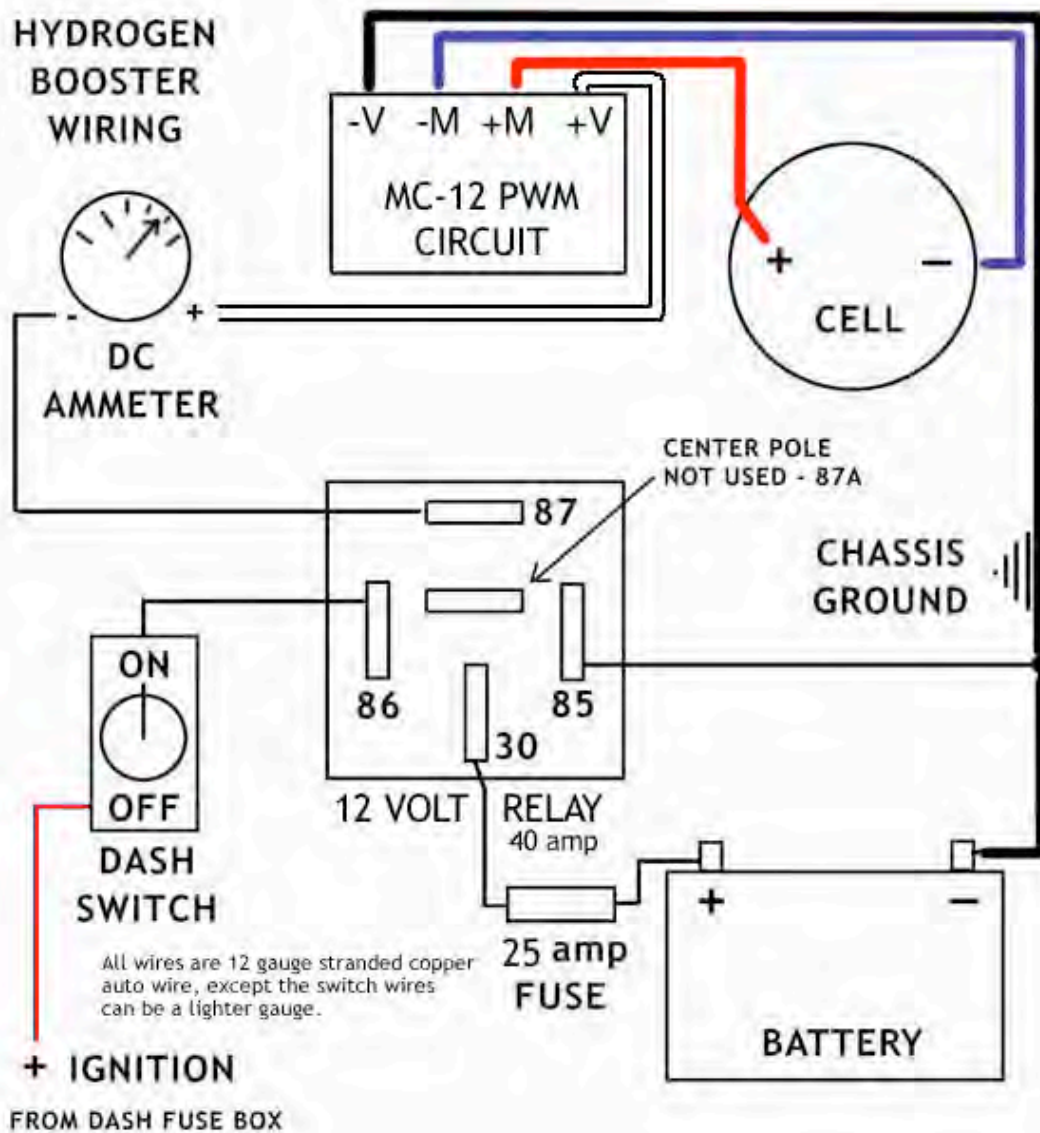
UNDER THE HOOD SIMPLE WIRING



You will be able to control amperage and hydroxy-gas production by turning of the throttle (Wavelength adjustment knob) on the dashboard. Velcro the box to your dash in an easy to view location. By turning the “throttle knob” down on your cell and watching the amperage go down, then you can tune the FREQ. Knob and see what FREQ> makes the most hydroxygas, by watching the amps go up, then tune the throttle knob to what ever you want. The more amps the more gas your cell will make. If amps migrate up and you can turn down the “throttle” or “wavelength knob” and amps will go down.



Here is a close up of the wiring under the hood and the relay connections; The next page has another detail of the relay wiring. #86 tab on the relay, is from the white wire from the switch in the monitor box. We mount the relay on the outside of the PWM Box on one of the screw holes. Next run A short wire to #86 to the inside of the box, white wire. Mount the PWM close to your cell.



This Wiring Diagram is for the PWM without a Monitor Control Box on the dash, rather a non controllable hookup with a DC Ammeter on the dash to monitor the amps, the controls here are on the PWM box under the hood, a one time adjustment. It is much better to be able to control the amps on the dash. If your cell's amperage goes up, due to heat, you can turn down the throttle (wavelength) and take the amps down, before you blow a fuse. Happy Hydroxy Gas traveling and saving miles per gallon. HG garage. Download anything you want at : <http://hydrogengarage.com/assembly.html> Read all you can on the subject. We thank you for ordering from Hydrogen Garage and supporting the cause. Any questions send them to : customerservice@hydrogengarage.com