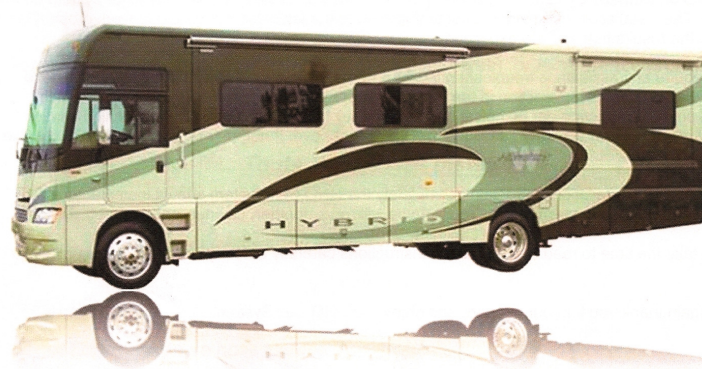


# MILEAGE SHOP

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## *Instruction Manual*



# 45% MPG INCREASE, BUT I'M NOT THERE ,YET

- THE SYSTEM IS MEANT TO BE “TUNED” FOR EACH APPLICATION TO MATCH ENGINE SIZE, LOADS AND DRIVING SPEED. THE OWNER MUST TUNE IT OVER TIME.
- THE 40 AMP CB IS THERE TO LIMIT CURRENT, PREVENTING BOILING WHICH CREATES STEAM. IT IS NOT THE MAXIMUM FOR TUNING THAT I THOUGHT. MORE CURRENT IS NOT BETTER.
- “OUR SYSTEM” IS GOOD FOR MOTORS UP TO 11 LITERS, SO WE SHOULD OPERATE OUR SYSTEM AT ABOUT HALF THE MAXIMUM CURRENT.

# NO HISTORY WITH GMC

- ***MILEAGE SHOP*** HAS NO HISTORY WITH EITHER OF THE GMC MOTORHOME MOTORS, BUT HAS SUCCESSFUL HISTORY (45% MPG GAINS) WITH MOTORHOMES THAT HAVE CHEVI 454 AND FORD 460 MOTORS RUNNING AT 20 AMPS WARM.
- JIM K HAS JUST PUT ONE ON A 403 MOTOR.
- IN MY TALKS WITH THEIR TECHNICAL MAN, I FOUND THAT I HAD WAY OVER SHOT MY AMPS AFTER FLUSHING AND REFILLING.

# EXECUTIVE SUMMARY

- ***MILEAGE SHOP'S*** HHO FUEL CELL KIT INITIALLY INCREASED MY LESS THAN 10,000 POUND, NO TOW, 77', 23' GMC MOTORHOME GAS MILEAGE FROM 9.7 MPG TO 14 MPG AT 65-70 MPH ON CRUISE CONTROL, INCLUDING, UP FREEWAY HILLS IN HIGH GEAR. THAT WAS BEFORE MY FLUSH AND REFILL AND GOING TO 40 AMPS.
- THAT'S A 45% MPG GAIN, MATCHING THEIR CUSTOMER'S PUBLISHED AVERAGE GAINS. I MISTAKENLY INCREASED MY CURRENT TO 40 AMPS AND HAVE NOT BEEN ABLE TO DUPLICATE MY INITIAL 14 MPG GAIN.
- THIS IS NOT A PLUG IN AND PLAY KIT. IT TAKES SOME AMPERAGE ADJUSTMENTS TO MATCH YOUR MOTOR SIZE, DRIVING LOADS, AND SPEEDS.
- IT IS MORE EFFECTIVE AFTER IT HAS WARMED UP. IT TAKES ½ HOUR TO WARM UP. SHORT TRIPS ARE NOT IT'S BEST USE BECAUSE WHEN IT FIRST TURNED ON, IT'S RUNNING AT LOWER AMPERAGE AND THUS, YOUR TUNED HH-O GASES OUTPUT IS REDUCED.
- THE FUEL CELL INITIALLY WORKED, BUT I HAVE NOT DUPUCATED IT SINCE I RAISED THE AMPERAGE TO MAXIMUM FOR THE SYSTEM. FOR OUR MOTOR SIZE, THEY RECOMMEND STARTING OVER AT 15 AMPS AND INCREASING IN 1/8 TEASPOON INCREMENT STEPS FOR AT LEAST 100 MILES AFTER EACH ADDITION TO CHECK THE MPG. WHEN THE MPG PEAKS, RETURN TO LOWER AMPS UNTIL YOU REACH YOUR MAXIMUM MPG. RECORD YOUR PROPER KOH AMOUNT.



AT \$4/GAL, MY ROI IS 4,137 MILES

AT \$4/GAL AND AN INCREASE IN MPG FROM 9.7 TO 14, HOW MANY MILES DOES IT TAKE TO SAVE ON GAS COST TO PAY FOR MY \$524 KIT?

4,137 MILES X \$4/GAL/9.7 MPG=\$1,706

4,137 MILES X \$4/GAL/14 MPG=-\$1,182

KIT COST=\$524

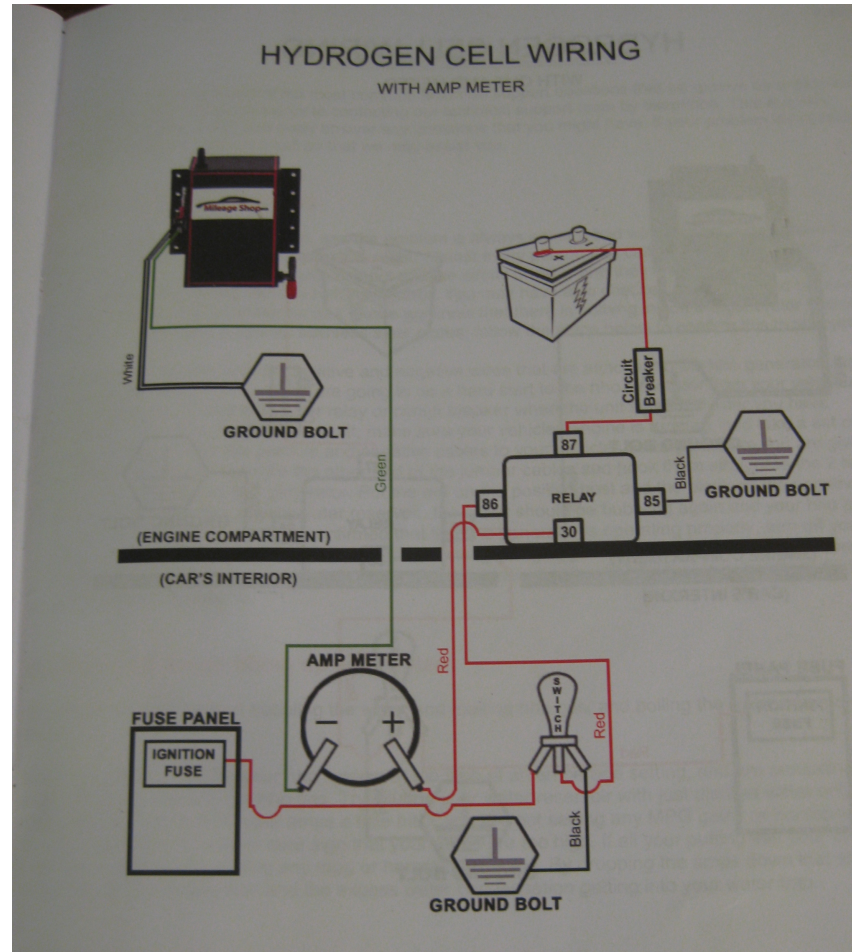
# WHY IT WORKS

- THE FUEL CELL USES ELECTROLYSIS TO SEPARATE DISTILLED WATER INTO “HYDROGEN GAS”. “HYDROGEN GAS” (H<sub>2</sub> + O<sub>2</sub> GASSES) HAS A MUCH HIGHER FLAME SPEED TO HELP THE GASOLINE BURN CLEANER AND MORE COMPLETELY.
- “THESE GASSES ACT TO INCREASE 87 OCTANE GASOLINE EFFECTIVE RATING TO 140 OCTANE”. THIS PRODUCED AN INITIAL 45% MPG IMPROVEMENT FOR MY GMC.
- ABOUT 30% OF GASOLINE THAT YOU PUT INTO AN INTERNAL COMBUSTION ENGINE IS NOT BURNED DURING THE NORMAL COMBUSTION CYCLE & PASSES OUT THE EXHAUST AS WASTE.
- MODERN GASOLINE ENGINES BURN THAT WASTE EXHAUST GAS WITH A CATALYSTIC CONVERTER. “HYDROGEN GAS” BURNS MORE OF THAT FUEL DURING COMBUSTION, PRODUCING IMPROVED MPG AND CLEANER EMISSIONS.
- ***THE FUEL CELL WORKED INITIALLY AS ADVERTISED!***

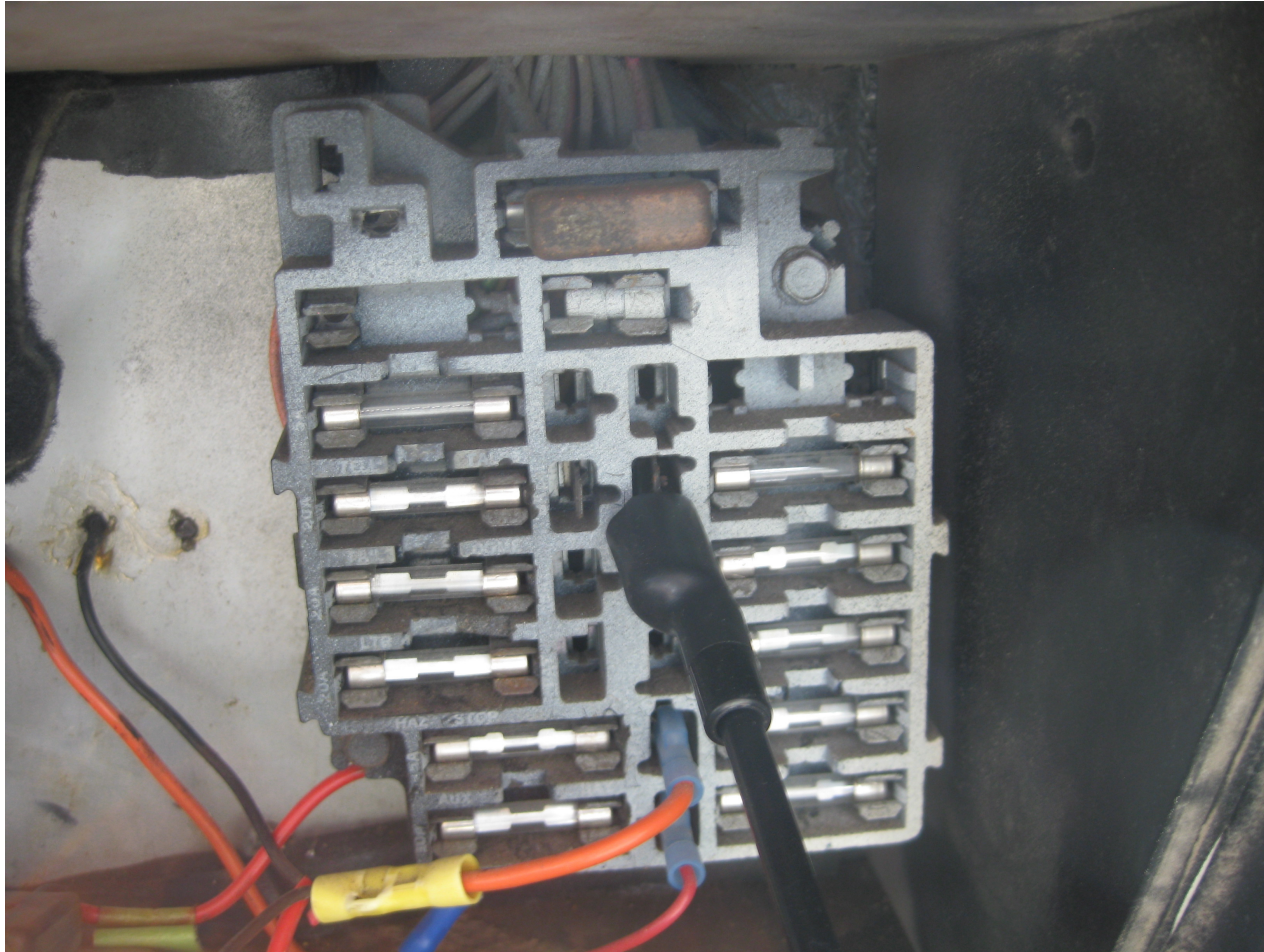
# HOW *MILEAGE SHOPS* CELL WORKS

- WATER IS 2 PARTS HYDROGEN AND 1 PART OXYGEN.
- ADDED ELECTROLYTE MAKES THE WATER CONDUCTIVE.
- BY MATCHING THE AMOUNT OF ELECTROLYTE TO LIMIT THE CURRENT LEVELS THAT MATCH YOUR ENGINE SIZE, DRIVING LOADS, AND SPEEDS, H, H & O GASES ARE CONSTANTLY MADE IN THE CELL BY ELECTROLYSIS.
- FROM THERE, THE GASES ARE BUBBLED UP THROUGH THE WATER TANK AND SUCKED INTO THE AIR INTAKE, WHERE THEY ARE MIXED WITH THE FUEL.

# ELECTRICAL SCHEMATIC

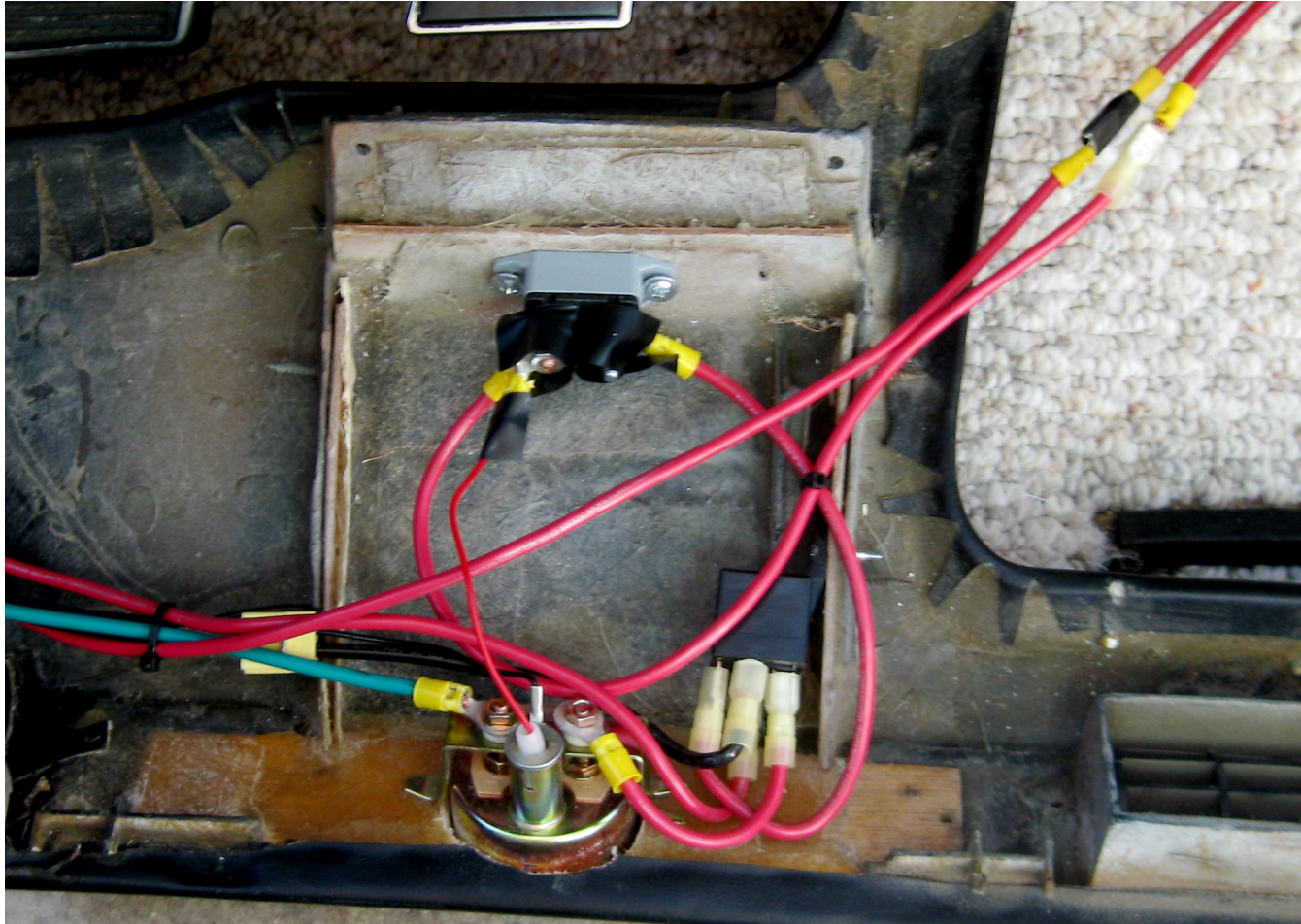


# ENGINE ON POWER CONNECTION





# CENTRAL WIRING



# ON/OFF SWITCH

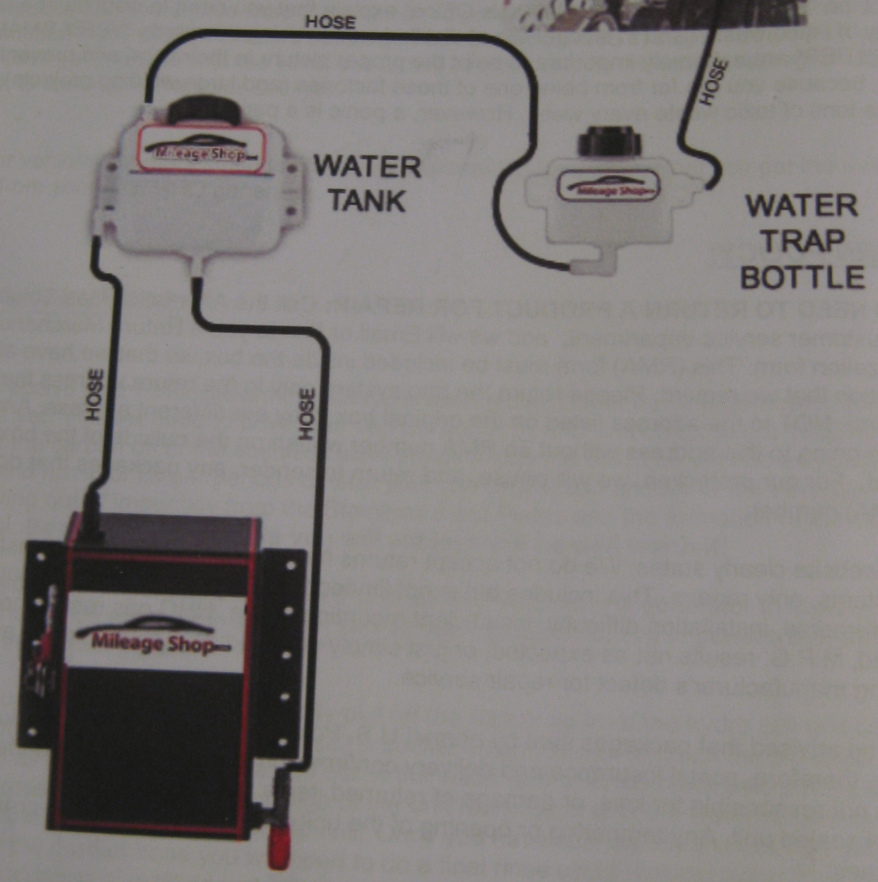








# VACUUM HOSE HOOKUP DIAGRAM



# HHO CELL AND BOTTLE PLUMBING BEHIND GRILL

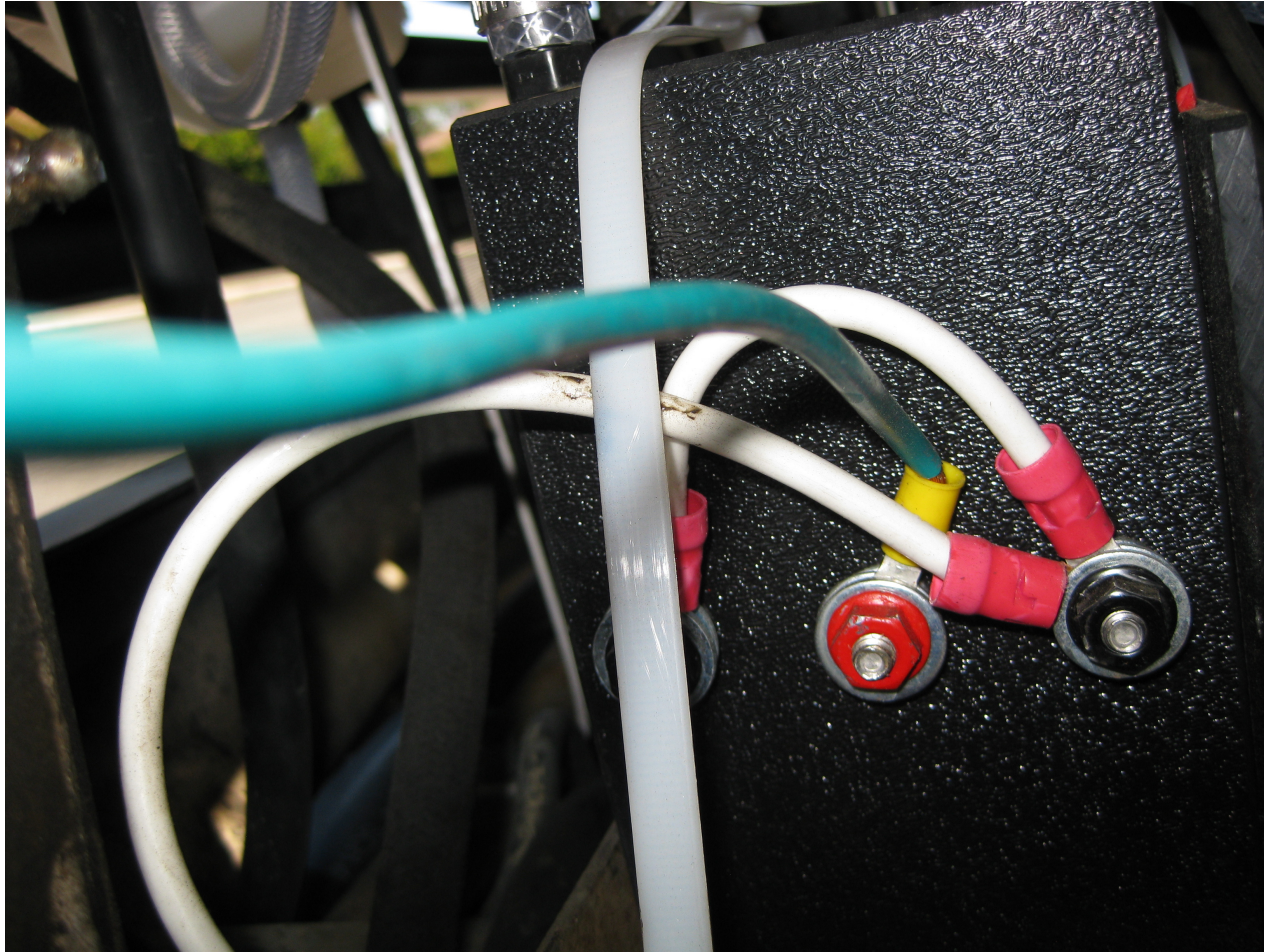




# FUEL CELL INSTALLATION

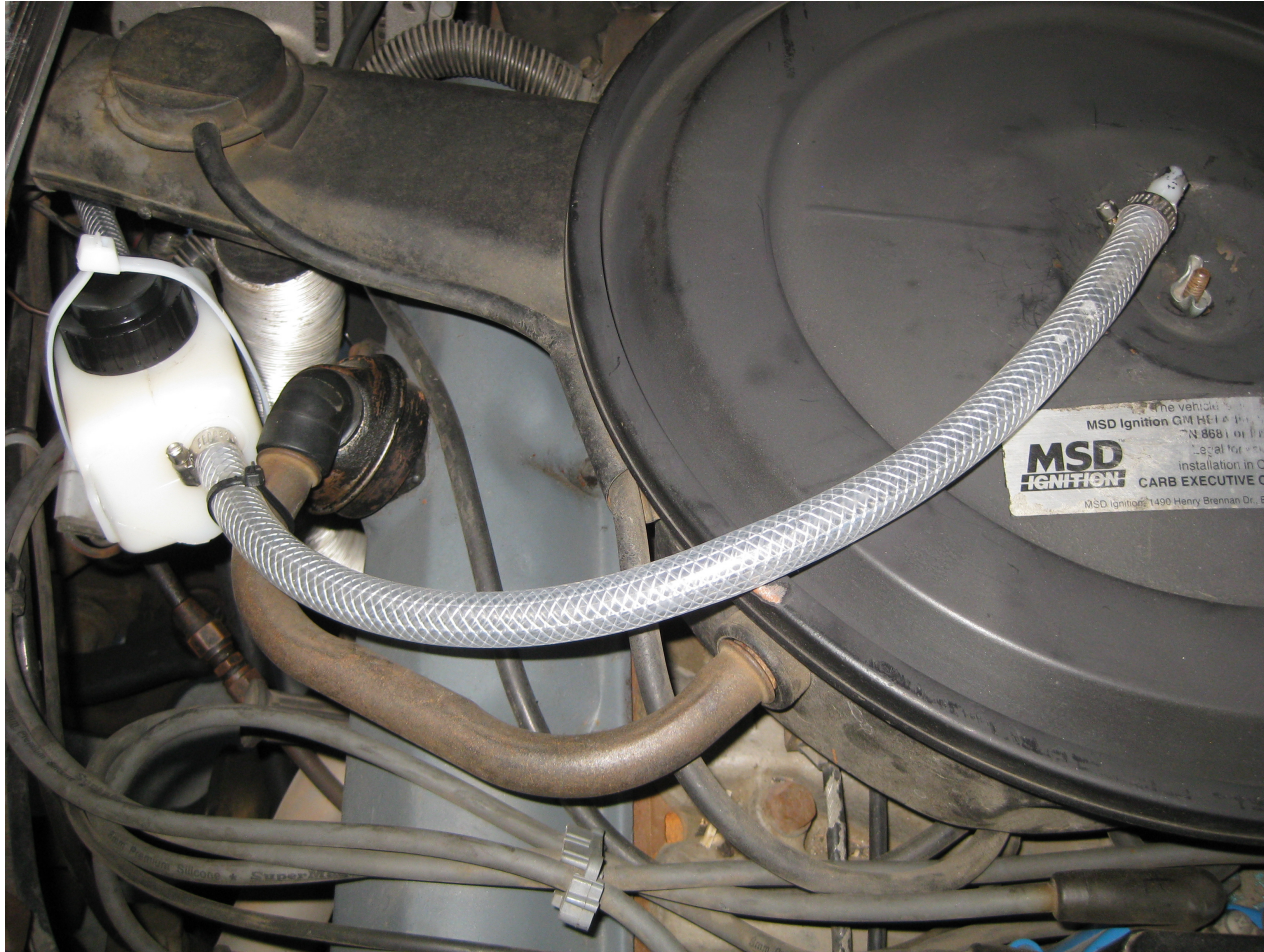


# FUEL CELL WIRING





# FUEL CELL OUTPUT TO CARB INTAKE



# ENGINE COVER MODIFICATIONS, +“SILENT RUNNING” COATING



# HISTORY OF MY 10,000 LB, NON TOWING, '77, 23' AT 65-70 MPH

- MY STOCK 455 ENGINE & 3.42  
DIFFERENTIAL AVERAGED 9.1 MPG &  
REQUIRED 2<sup>ND</sup> GEAR FOR 6% GRADES.
- MY CO-OP 455 ENGINE & 3.42  
DIFFERENTIAL AVERAGED 9.2 MPG BUT  
USED 2<sup>nd</sup> GEAR ONLY FOR 6 % GRADES  
ABOVE 4,000 FEET

# WHY I ADDED MSD & PINGMETER

- AT 12,000 FEET ALTITUDE, THINNER AIR RESULTS IN 70% OF POWER & REDUCED ENGINE “KNOCKING”
- SOME GMCWS OWNERS IN HIGH ALTITUDES INSTALLED MSD VARIABLE IGNITION TO ADVANCE IGNITION THAT IMPROVED PERFORMANCE.
- MSD RECOMENDS ADJUSTING +1.5 DEGREES OF ADVANCE PER EACH 1,000 FEET IN ALTITUDE. “KNOCKING” CAN BE MONITORED BY THE PINGMETER.
- DYNO SHOP SUGGESTED I START WITH 7 DEGREES MSD ADVANCE TO MATCH THE FASTER FLAME SPEED OF HH+O GASES. THEIR SHOP IS AT 800 FOOT ALTITUDE.
- At 10,300 FEET, GOING UP TO CEDER BREAKS, I WAS AT MSD FULL ADVANCE OF +15 DEGREES. NO



# DYNO TUNED + MSD ADDED

MY CO-OP ENGINE WITH 3.42 DIFFERENTIAL, DYNO TUNED, & MSD, AVERAGED 9.7 MPG@ 65-70 MPH & PRODUCES 370 FT-LBS OF TORQUE @60 MPH.

AFTER DYNO TUNING, MY GMC MOTORHOME TAKES ALL 6% FREEWAY GRADES IN HIGH GEAR ON CRUISE CONTROL SET AT 65 MPH UP TO 7,000 FT ALTITUDE (MAX FREEWAY TESTED).

# INITIAL SYSTEM SET UP

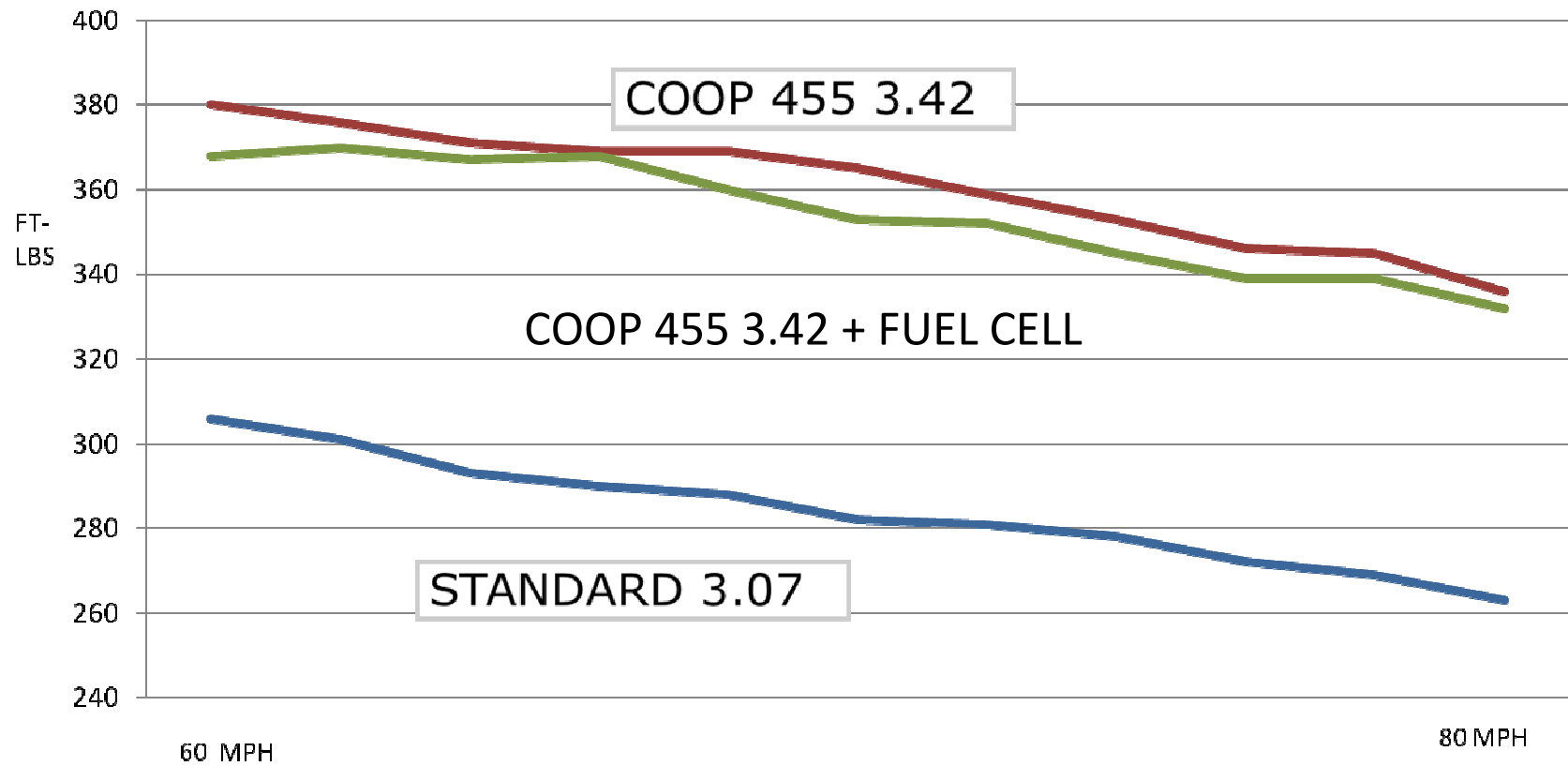
- TUNE UP YOUR ENGINE. THIS IS THE BIGGEST VARIABLE TO IMPROVED MPG.
- BUY THE “EXTREME MILEAGE SAVER” FOR ENGINES ABOVE 5.7 LITERS. THE KIT INCLUDES ALL PARTS AND INSTRUCTIONS TO INSTALL AND CHECK OUT THE FUEL CELL SYSTEM. IT TOOK ME 6 HRS TO INSTALL THE KIT. IF I WERE DOING IT AGAIN, I WOULD BUY THE NEXT SIZE HOSE CLAMPS & CUT THE INSTALATION TIME IN HALF BECAUSE THE HOSE SWELLS OVER THE PUSH ON CONNECTIONS. I USED VICE GRIPS TO CLOSE THE CLAMPS.
- THE MILEAGE SHOP RECOMMENDED STARTING WITH 2 TABLESPOONS/GALLON OF POTASSIUM HYDROXIDE (KOH), SUPPLIED WITH KIT, AND INCREASE BY 1/8 TEASPOON EVERY FILL UP TO MEASURE GAS MILEAGE. IT TAKES ½ HOUR TO WARM THE FUEL CELL. ***IF YOU GO OVER 40 AMPS, INSTRUCTIONS ARE INCLUDED ON HOW TO DILUTE THE MIXTURE TO REDUCE AMPERAGE.***
- USE ONLY DISTILLED WATER. TAP WATER, PURIFIED WATER, RO WATER WILL NOT WORK AND WILL VOID THEIR “LIFE TIMES” LIMITED WARRANTY.

# ROAD RESULTS AFTER FUEL CELL

- MY INITIAL GAS MILEAGE IMPROVED TO ***14.0 MPG AT 65-70 MPH, A 45% MPG GAIN.***
- MY GMC STILL TAKES ALL FREEWAY GRADES BELOW 7,000 FEET (MAX TESTED) IN HIGH GEAR ON CRUISE CONTROL SET AT 65 MPH. SLOWS TO 60
- AFTER FLUSHING, MY ELECTROLITE WAS THE BASIC 2 TABLESPOONS IN A STARTER GALLON, PLUS 7 1/2 TEASPOONS ADDED IN THE WATER BOTTLE TO BRING THE CURRENT UP TO 40 AMPS AFTER WARM UP. THAT AMOUNT OF KOH HAS GOT TO GO MUCH LOWER TO GET THE 45% MPG GAIN. DRAIN AND START OVER.

# FULL POWER TORQUE TESTING 455 MOTORS

ALL FOUR BARRELS OPEN AT MAXIMUM THROTTLE



# THEIR CLAIM FOR EXISTING ENGINES

- QUIETER AND SMOOTHER ENGINE. (TRUE)
- COMPLETE COMBUSTION BURNS COOLER. I HAVE AN ALUMINUM RADIATOR AND IT RUNS AT THE SAME TEMP. MY FAN NEVER COMES ON AFTER START UP, BUT I HAVE DUAL ELECTRIC FANS ON MY A/C.
- EXHAUST IS ENVIRONMENTALLY CLEANER.
  - \* LONGER LIFE EXPECTANCY OF PISTONS RINGS, PLUGS AND VALVES BEING CLEANED BY BURNING “HYDROGEN GAS” (TIME WILL TELL)

# MAINTENANCE

AFTER THE FIRST 1,000 MILES, DRAIN AND FLUSH TWICE WITH DISTILLED WATER. REPEAT YEARLY.

- REFILL WITH YOUR CORRECTED ELECTROLYTE SOLUTION. KEEP RECORD OF KOH ADDED.
- TOP OFF WATER RESERVOIR WITH DISTILLED WATER AT EACH FUEL FILL UP. ~2 CUPS/1,000 MILES
- FOR COLD WEATHER OPERATION, ADD 20% ISOPROPYL ALCOHOL TO WATER TANK AS ANTIFREEZE.
- IN CA ZIP CODES THAT REQUIRE EMISSION TESTING REMOVE LINE TO CARB BEFORE TEST