

Subject: Convert gas engine to alcohol?

Alcohol can damage various seals and "soft" parts of your engine and carb, unless they're designed with alcohol in mind. Propane and methane can power an engine, but you may ruin your valves unless they're designed for high-temperature service.

You can run them on volatiles baked off of wood, but you'll need to filter out moisture and crud. FEMA has a manual you can order that tells you how to do it with a couple of metal drums, some fittings, and some silver solder. Perhaps someone can repost the ordering information.

-- Ron December 28, 1999.

I race methanol burning sprintcars so this is right up my ally. you can convert a gas engine to methanol by simply drilling out what ever jets the fuel mixture, allowing it more fuel. probly about 20% more fuel will be needed. it only dries out o-rings and gaskets over a long period of time, but you can buy a top end lube to mix with the methanol.

-- eric December 28, 1999.

http://greenspun.com/bboard/q-and-a-fetch-msg.tcl?msg_id=00286X

I own and drag race my Alcohol Funny Car where I live. Just remember that when running an alcohol engine, you've got to choke it when it gets up to operating temp. This is because when the engine gets hot, the alcohol starts to vaporize and evaporate before entering the combustion chamber. So as the engine warms up, it needs to run more rich to compensate. Think of setting the carburetor opposite of what you would do when running regular gasoline. Also, be carefull not to backfire your engine when you are first starting it up, it could bend your carburetor float(s).

I ran a t/f funnybike in 92&93 was #2 IN U.S. I.D.B.A. & Prostar. The bike was a 1325 Kaw blow thru alcohol injected turbo. A gas engine requires almost twice as much alcohol as gas. Exhaust gas temps are much lower then gas. You can easily buy methanol (wood alc) from any go kart or race supply. Methanol contains oxygen ethynol has more but it is drinkable I couldn't get it. The easy way to stop seal deterioration is to run gas thru the engine before shut-down. There are additives also. Like nitro it will go past the rings and contaminate oil quickly. It will almost freeze an intake manifold. The exhaust fumes are toxic (formaldahide) try to stay clear. It is an excellent fuel especially for racing and mixes with nitro. Its all they use in Brazil and the US makes cars for their fuels every year. By the way the bike put out 750hp on our Superflow Dyno, I've got a 1400hp twin turbo sm blk. 71 Nova sittin in my driveway love those turbo's....good luck.. Turbo Stu am currently converting my Honda Cr 250 motocross bike to ethanol. Only minor tuning remains . I hope I can help lay down some answers for anyone who wants run ethanol. First of all I built an insert to raise the compression to 15 to 1. The chamber has maximum quench - .035". No timing changes were required to the engine due to this. The fuel is 99% ethanol with 1% gasoline denaturing agent mixed 45 to 1 with Maxima 927

racing castor as the lubricant. The carburetor is a Mikuni TMX with a custom made needle and jets .The main jet on gasoline was a #410(.068" ID) now it's been opened to .093"(90% larger hole size in surface area) This project has been under way for several months with the fuel left in the carb during this time. No corrosion or seal damage is apparent. The US Motors website has a chart showing the effects of different chemicals on electric motor housings with ethanol not showing a corrosive effect under 150 F. Spark plug selection has not been finalized but it looks like it will be 2 or 3 numbers hotter on NGK's scale. Initially detonation from running lean jets blew the orings a few times out of the cyl.head, but tuning is eliminating this . Removal of the head revealed no damage to other than the orings. The engine runs perfectly clean with no carbon or deposits what so ever. Compared to gasoline the bike has picked up enough torque from low to mid range to feel like an engine twice its size and on top it pulls hard enough that I'm shifting constantly to keep it from winding out. I'm sold. I'd be glad to answer anyone with their questions on ethanol

-- hang on hoek, November 03, 2002.

Alcohol, Propane, Methanol, Natural Gas? these may be better than Gasoline, but they're still aren't clean fuels. the only logical fuel to convert to is Hydrogen. you get longer engine life, zero emissions, no more oil changes(simply replace the oil filter and top off at regular intervals),starts in the coldest weather(the colder it is the better it runs). and anything that uses a petroleum based fuel can be converted to hydrogen.

Hi guys I'm an Italian man. Here in Italy a lot of people converted their gasoline cars into propane/methane cars. There are specialized sellers. Now technology has been well developed and one can loose just 10% or less in engine power. look here <http://www.bigas.it> and we have other factories like this.

also noticed several people asking for sources of methanol. The only way that I know of as far as homebrew is through destructive distillation of wood. Basically, you heat wood in the absence of O2 and condense the resulting gas, and then from there you distill the cooled liquid, which gives you methanol. Google it, there's heaps of info on the web about it.

My old man has a home brew setup, and he says he can produce 180 proof alky without formaldehyde through carbon distilling. If anybody is interested, you'll need a pipe 1.5m long, about 3/4 inch wide, with a piece of filter paper on the bottom, and a good sized funnel. Fill the pipe full of distiller's carbon (it will need to be moist, run it through with water and wait for the water to drain out) and run the alcohol through. What comes out is pure, if not very close to it.

You may need some clamps to ensure that leakages are kept to a minimum. A good way to do it is to get another piece of pipe one size smaller, stick it in the top end of the larger pipe and use a clamp (the round sort) to tighten them around the bottom of the funnel. This will result in the thing being bloody air-tight, so expect it to bubble like crazy when you put the carbon in.

Now for those in the know, 180 proof alcohol loses its strength after awhile when it contacts air, so a good idea would be to pipe the resultant alcohol into an airtight container that can hold it, then pipe it straight into the still. We have a container we keep alcohol in that has a tap on it and a pipe coming out the lid, so when we need the stuff to flow, we just turn the tap on.

Hope this is a help... just note that this practice may not be legal in certain regions... apparently a home built still is illegal in Australia.

Oh yeah and you can convert a Diesel engine to Biodiesel (I think grease)
<http://www.greasecar.com/>

Well when it comes to Alcohol.. talk to a brazilian.

That in fact happen to be me.

Basically you should be increasing your mixture to be 50%+ richer than petrol. You will also need to be running 180 proof or richer. (198-200 proof if you plan to mix it back and forth between petrol) You may need a electric fuel pump if you have a mechanical one

Now it all depends on your vehicle but the best way to heat the alcohol is to wrap some thin metal tubing around the exhaust manifold inbetween the fuel filter and the injectors/carby

If you want to increase the performance increase the compression and advance the timing (alcohol's 'octane' rating is higher than premium petrol) also many spark plugs have two types for each model vehicle... pick the hotter ones!

Also if you have a fuel injected car usually you can get a 10c resistor that tricks the computer into thinking it is running lean and it pumps more fuel.

Personally if you going to do it the conversion look into getting hold of 200 proof alcohol/ethanol/methanol and mix it with a little high octane premium petrol (10L of alcohol to 1L Premium) in fact pick a brand like Vortex in Australia that has a lot of additives because that what you want it for not the octane (in addition add a bottle of nulon premium octane booster every second full tank)

Also, Alcohol will make your engine run cooler and clean all the gunk build up in your engine... so don't be alarmed if you've done all of the above and it splatters and shudders. Just rev it softly up to around 2500rpm for a few minutes... older and high milage cars may need to 'settle in' over 2-3 tank fulls

Lastly if you carry a little metal army water bottle in the boot with a little premium petrol on those cold days when the alcohol just wont start spill a cap full of petrol into the carburetor and always let your engine heat up for at least 3 minutes if you don't have a manual choke (time it with a watch)

-- Seth December 14, 2004.

You may need a alcohol carb to run off alcohol. If you are converting a 5hp B-S, then just buy a alcohol carb (the're not hard to find) and expect to gain about 1hp. By the way, did you know that you can run a diesel off of hemp oil (A.K.A Marijuana oil)? You can probably guess what comes out as exhaust, which may be a good or bad thing, depending on your preferences. And you can also run a gasoline engine off of kerosene. Trust me, I've done it!

Here in the Midwest, we can buy E-85 (85% ethanol, 15% gasoline) at some gas stations. I've been running my '92 Suzuki GS500 motorcycle on it for almost two years. The "conversion" wasn't so much of a conversion, as just plain-old tuning.

When I first put E-85 in the tank, I tried starting it, to see if it would run. It was waaay too lean. For fun, I put a bathtub strainer over the air filter intake, and put different sized disks in the strainer basket, to choke-off the air intake (make it richer). It was still too lean. Finally, I stuck a Dixie cup in the air intake, completely blocking the air intake (as far as I could see). Finally, it would idle (although not smoothly).

So then, I embarked on tuning the engine to run richer (without the Dixie cup). I enlarged both the idle jet (to 143% of stock jet diameter) and main jets (to 128% of stock jet diameter). After tuning the pilot air/fuel mix, I've been running in this configuration successfully. My best guess is that in spring/summer/fall, I'm getting about 75% the MPG as I did with gasoline.

Other changes I made are: use synthetic oil (Mobil-1), since dino oil does not mix at all with ethanol; went one plug hotter on NGK's scale; advanced timing from 5 degrees BTDC to 12 degrees BTDC. If I were serious, I'd use domed pistons to increase compression (\$300 + labor), and change the sprockets to take advantage of the added torque. I suspect that I could get 90% of the MPG.

But for now, I'm happy to burn E-85 with minimal changes to the carburetor. Most people should do fine with just changing the carburetor jets and maybe switching oil. Burning pure ethanol would be similar, but the increases in jet size would be a little bit more extreme.

Note that motorcycles are good for this, because there is a short manifold from the carburetor to the engine. Cars have more complex intake manifolds, and may benefit more from a manifold heater.

I have a few notes about the conversion and E-85 at <http://E85.SpecialGreen.Com> . Feel free to drop me a note there.