Installation hydrogen on a Petrol/Gasoline engine Jan 16 2025

Warning

Do not use a concentration of caustic higher than the recommended value (as shown BELOW- Setting up Generator) as this may lead to excessive electrical energy being wasted as thermal energy and seeping of the caustic powder from the joints of the sealed unit. Having a low concentration of caustic is ideal as more energy is used into the oxidation / reduction of water into hydrogen and oxygen, rather on the “redox”. of the caustic solution Greater efficiency = more gas with less electrical load

Congratulations!

You have made a good decision in purchasing A Generator” System. Properly installing a significant contribution to both your own well-being and the well-being of the world you live in.

Getting started:

Note If you are installing the “hydro-booster system” on a Petrol engine you must run Gas hose to a location UPSTREAM of the turbo, that is, on the LOW PRESSURE side of the turbo, in the air-intake cowling, or into the mouth of the air intake cowling, if you can access it.

General Installation Guidelines

One of the advantages of using this system is that it can be provided to you preassembled with power supply PWM, electrolyte storage cell, wiring, switches, ammeter, electrolysis cells and hydraulic / pneumatic tubing all connected and mounted. Your only task is to mount the wiring from the battery/alternator to the cell enclosure and connect the delivery tubing from the cell enclosure to the air / fuel intake on the engine. After that you can move the cell assembly from one vehicle to the next etc with ease.

The cell enclosure is

a. an extra large marine battery box and cover which can be placed and secured in any position in the vehicle (often there is no room under the bonnet but room in the rear of the vehicle)
b. a steel , aluminium or Dewalt Toughbox enclosure which can be placed and secured in any position in the vehicle

Because of the thousands of ever-evolving vehicle configuration in the marketplace, we cannot offer specific, detailed, instructions to precisely fit every possible installation. The following guide is designed to present a typical installation, which the installer can use as guidance in installing the device in his/her own vehicle. This is a relatively simple process and should be handled with ease by any professional mechanic or mechanically-inclined individual with the appropriate tools.

Installation Instruction:

Material required: 1). 5m, 50 amp 8 B&S double insulated wring;

2) 5m, 10mm Ø HDPE air brake tubing;

3) One 30amp manual reset circuit breaker ;

4) 2m harness strap & securing tabs ;

5) Gas bubbler & three brass push bock fittings; (see photo)

6). Potassium hydroxide pellets;

7) Five litres of distilled water

8) optional - Electronic fuel enhancer unit (EFIE);

Installation

1. You can begin by determining where you want to locate Hydrogen generator system" in/on your path to route the Hydrogen hose and electrical wires from the system device to the engine compartment.
2. You should remember that you will most likely want to run the hose and wires together along a frame member or other similar under-vehicle location where you can attach mechanic's wire or Metal cable ties to hold them in place. You MUST keep both the Hydrogen transfer hose and electrical wire at least 25 cm from the exhaust pipes and exhaust manifold to prevent them from burning, shorting, or melting
3. It is recommended to run gas pipe through 12mm internal diameter reinforced water hose which can be secured under vehicle using Metal G-clamps or stainless steel cable ties to the vehicle body.
4. The Wiring from the battery can also be inserted into12mm internal diameter reinforced water hose which can be secured under vehicle using Metal G-clamps or stainless steel cable ties to the vehicle body.
5. Decide where you want to locate the Hydrogen generator. Then determine a path to route the Hydrogen hose and electrical wires from the "generator" to the power supply in the engine compartment. You should remember that you will most likely want to run the hose and wires together along a frame member or other similar under - vehicle location where you can attach mechanic's wire or metal ties to hold them in place. You MUST keep both the Hydrogen transfer hose and electrical wire at least 25 cm from the exhaust pipes and exhaust manifold to prevent them from burning, shorting, or melting.
6. For inside-vehicle, in-trunk, in-truck-bed, or in-commercial-cargo-bay installations: Once you have determined where you want to locate your "Generator" system, find a place hole for the Hydrogen transfer line and one 3/8" hole for electrical leads (30 amp double insulated cable) to the engine compartment. Drill through the vehicle deck to the underside of the vehicle

7. Make sure you stay clear of the fuel tank, brake lines, and any other obstructions which would make it difficult for you to push or pull the Hydrogen transfer hose and electrical cable through the holes you have drilled. Then either push or pull the Hydrogen transmission hose through the 3/4" hole you drilled, providing enough slack in the hose near the “Generator” system to push lock fitting on the outside of the system
8. You might want to wrap the transmission Hose with duct tape or apply appropriate size split wire loom where it passes through the vehicle deck in order to reduce the possibility of eventual wear on the Hydrogen transmission hose. Alternatively push the tubing through 12 mm internal diameter reinforced water tubing and fix this water tubing to the underside of the vehicle with metal cable ties / connectors.
9. An experienced Automotive electrician should be used to connect the cable to the Battery /alternator so that it is activated from the alternator via a Heavy Duty 50Amp Solenoid relay switch.(See Photo) Thus when the engine stops and the alternator stops working , then the Relay supplying electrical Power to the Generator system , switches off. This prevents the system working if the engine is not switched on and running.
10. Connect the 50 amp (8B&S) double insulated cable to the battery positive cable to 30amp manual reset circuit breaker and 50Amp Solenoid relay unit.

    a. Connect a length of red 50amp wire to the positive terminal lug. Connect the other end of the wire to relay terminal 30.

    b. Connect relay terminals 85 to the ignition switch via the master switch and 10 amp fuse (as shown in figure 2). (This will only activate the relay unit when the engine is switched on.). Alternately connect terminals 85 to be activated by the vehicle alternator

    c. Connect a wire from relay terminal 87 to the first terminal of the 50amp circuit breaker. Connect the 2nd terminal of the circuit breaker to the red wire of the double insulated 50amp cable that takes power to the Anderson plug of the system

    d. .Secure the black cable from the 30amp cable to the body /earth of the vehicle -- ---- See diagram 1. e. Connect terminal 86 with a 8 mm wire (50amp) to the earth of the vehicle

8. Then push or pull the 50 amp double insulated cable electrical wires through the 3/8" hole. Double insulated cable is used to protect them from possible wear and shorting. This cable is used to connect the Electrolysis system to the battery/ alternator in your vehicle engine bay.

9. Pass the double insulated cable through the vehicle cabin along the line of the wiring loom.

10. Attach the free end of the power cable to a 50amp Anderson Plug to connect to the HHO generator.

11. Mount and secure the 10mm Ø air pipe to the underside of the vehicle using metal ties.

12. Pass one end of the pipe through the floor of the vehicle rear to connect to the HHO generator.

13. Locate an area on your air-intake cowling as near the air- intake termination at the throttle throat as you can conveniently access (On diesel engines, you MUST input the Hydrogen

transmission hoses UPSTREAM from the turbo, on the LOW PRESSURE side of the turbo). Drill a 7/16" hole.

14. Remove the air-intake, or move it to a position where the drilling debris won't fall into the throttle throat or intake manifold. Re attach the air-intake cowling and screw a 1/4" BSPT (threaded) x 10 mm Push lock fitting (provided with your hole you drilled in the air -intake. There is no need to over-tighten the fitting(s). If you strip the threads or have trouble satisfactorily affixing the fitting into the air-intake cowling, you can clean/de-grease the area around the hole(s) and use any good plastic glue epoxy, Sumo Glue, etc., to secure the fitting

15. Attach the Hydrogen transmission hose (10 mm trucking air brake tubing) to the Push lock fitting you attached to your air-intake . You might double-check to be sure you have chosen a route for the hose and wire that will avoid the hot exhaust manifold and exhaust pipes as well as avoiding any moving mechanisms that would entangle, crimp, or rub the hose. Again, it would be a good idea to follow the same path as the electrical Cable so the hose and the cable can be bundled with electrical or duct tape as you attach and support them with plastic ties and/or mechanics wire as they traverse along the vehicle framework generator" and the engine compartment

Setting up Generator

1. Add distilled or rain water to recycle tank until it is 2/3 full with the pump running

2. Measure 2 heaped teaspoons of Potassium Hydroxide Pellets and dissolve them into 50 mls of water. This will serve as your concentrated solution

3. Turn the potentiometer switche of the PWM fully clockwise. This places the PWM into the 100% duty cyle position so that the unit is 100% switched on

4. The power supply should now be connected and switched on

5. While running the system Gradually add the Potassium Hydroxide solution to the recycling container in small amounts, while watching the current flow increase towards 20 amps and then stop. The mixture should now be correct

6. Once 20 amps has been reached, adjust both Potentiometers anticlockwise by one quarter of a turn until the current drops to 18 amp

7. Operating the system will slowly increase the solution to operating temperature during which time the current flowing will rise to a stable current of 26 amp

8. Run the system and after one hour of operation , recheck the current flowing.

9. Readjust the current flowing to a maximum of 25 to 27 amp. This is the operational value and you should not need to readjust the unit again. With each trip the current flowing will rise as the temperature of the solution rises , to a maximum of 27 amp. DO NOT EXCEDE THIS CURRENT FLOW AS IT MAY LEAD TO INTERNAL DAMAGE WITHINN THE SYSTEM ELECTRONICS. The manual reset 30 amp circuit breaker will switch off at 30 amp. Add more water Readjust the current to 25 amp with the system warmed up.

10. Add water to the recycling tank till it is 8cm from the top. The tank is now holding 2.5 Liters of a very dilute caustic solution.

11. The gas piping is connected to the air intake pipe prior to the throttle body and prior to any turbo charger fitting.

12. Use a Brass male/female Push-lock fitting (1/4 inch BSPT) to screw into the tapped hole on the air intake pipe. Push the pipe securely into the 10mm “Female” connector

Mounting the HHO system:

1. Attach the 2 strap / “ Battery strap

2. Pass securing strap through the two mounting Brackets.

3. Place HHO system enclosure in position on top of strap.

4. Connect 2 free ends of the strap together and tighten, securing the system enclosure in position.

5. Connect the Anderson plug attached to the 50amp double insulated cable. To the Anderson plug on the exterior of the HHO Gen 10 or Gen 15 or Gen 20 system

6. Push the free end of the 10mm Ø gas pipe into the push-lock bulkhead fitting on the front of the system enclosure.

7. Turn on Master switch if fitted), turn on engine.

8. Check current flow in the HHO generator. Maximum current cold is 20 amp.

Bubbler installation:

1. Materials required:

a) 10" water purifier housing, ¼" BSPT fittings size

b) 1m of 10mm external diameter plastic PVC tubing

c) two push lock fitting, 10mm & ¼" BSPT

2. Screw in the two ¼" × 10mm BSPT fittings into the two ports at the housing.

3. Cut a length of 10mm Ø pipe to a length of 8" or 12cm.

4. Push the 12cm length of pipe into the port in the underside of the top of the filter housing

5. Mount the “bubbler housing” in a secure position above the electrolyser output

6. Connect a 10mm Ø tube from the Generator housing to the out pipe of the bubbler

7. Half fill the Bubbler unit with water and check its level each day before running

8. Connect a 10mm Ø from the bubbler to the air/fuel inlet tube before the throttle body. – do not connect it to the low pressure inlet manifold –

This arrangement means that gas from the HHO Generator will Bubble through the Housing. And into through the throttle body on the atmospheric pressure side of turbo or throttle body –

If you have connected the pipes to the wrong fittings, gas pressure will try to force water into the engine. Stop this by correctly fitting the gas pipes.

8. Gas from the HHO Generator should bubble through bubbler to clean and dry the gas before being passed into the engine.

9. The Bubbler also acts as a flash arrestor in the event of an engine “ backfire’. A flash arrestor bubbler and the engine.