



ECONOMIZADOR DE HIDROXIDO

This is not the installation manual, just a reference guide to evaluate installation convenience

Natural Gas Engines and Furnace Heating with HHO assistance

Quick Reference guide

The assistance will provide HHO to mix with the the fuel, natural gas or diesel, for engines or heating boilers, the HHO is obtained from the water by electrolysis

Diesel Engines:

FOR MARINE OR STATIONARY ENGINES

The addition of 10 LPM to Diesel Engines up to 500HP, increases performance between 15 % and 35 % depending on the injection system. In the case of common rail injection system may require replacement or modification of the electronic Control Unit for best results, a simple installation provides 15 % gain. , modifying sensors or reprogramming , increase savings up to 35 % and increase the engine horsepower (HP) about 20%

NATURALGAS BOILERS OR FURNACES

The aggregate f 10 % to 20 % OF HHO TO NATURAL GAS raises temperature of the flame 200 and 250C , and the size of the flame 25 to 30 % , increasing OVERALL efficiency about 40 % to 50 %.



ABOUT USE AND MAINTENANCE

- 1) **Technical characteristics**
- 2) **Front controls**
- 3) **Get it working**
- 4) **About water supply**
- 5) **SAFETY**
- 6) **What can this device do ;**
- 7) **Maintenance**

1: CARACTERISTICAS TECNICAS: Generator de Gas HHO

- a) **POWER : 100 AC to 120AC 60HZ / 180V a 240 V - 50 HZ**
- b) **SIZE H = 40 cmts , W= 30 cmts D = 45 cm**
- c) **Weight , 25 kg (without water tank) (about 52 pounds)**
- d) **Power requirements : 5 to 10 amps**
1100 Watts at 5 LPM
2200 watts at 10 LPM (600 LPH)
- e) **Water requirements ; good quality TAP water**
Working at 5 LPM, 115 ml / H
Working at 10 LPM. 330 ml /H

- f) Tank Capacity 30 Litres (just 25 used during operation)
- g) HHO GAS pressure 70 mbar (1 PSI and this is enough to come into any domestic natural gas system)



Water Tank includes a steel mounting frame

h) WATER USE :

The tank features an automatic system, you must connect to the water installation, with automatically be kept always at the optimum level

i) SAFETY ELEMENTS :

- 1) Magnetic amperage limitation
- 2) Automatic Temperature switch
- 3) Automatic water level control
- 4) Automatic turn on and off input (connect to thermometer or any other the furnace control)
- 5) Security valves will open at 3 PSI
- 6) 3 fans keep ideal temperature under control for electrolysis

2: Front controls

On Off Key

Ammeter

All other functions are automatic



Operation is automatic, and controlled from the Boiler or furnace signals , using an input prepared to accept control signals from the thermometer, turbine motor, or fuel electro valve.

WATER LEVEL

There is a level sensor attached to the tank. Using a solenoid valve automatically keeps water at the optimum level and proper KOH concentration.

3: HOW TO PUT IT TO WORK

Quick reference

As any gas device, you need a qualified installer , specially to connect the control cable to the boiler or furnace , since you have to use the same signal getting the furnace working to turn on the HHO generator this signal is the Turbine Power, fuel Electro valve power or thermometer .. This is a task for a qualified person.

- 1) Tank **MUST** be attached to the wall about 1.5 mt over the generator , appropriate steel mounting frame is provided
- 2) Install **BOTH HHO OUTPUT HOSES** to the tank according to diagram
- 3) Install water input from the building through the automatic valve (upper right)
- 4) **CONNECT HHO CONTROL INPUT TO THE BURNER (FURNACE OR BOILER)**
- 5) There are 3 possible ways to do that
 - A) Using the thermostat usually available close to the back side of the instruments panel
 - B)
Use the Turbine power as Turn ON control signal for the HHO generator , we prefer this way because if something goes wrong the turbine will be powered down immediately , as well as the HHO generator
 - C) **CONNECT** to the Fuel electro valve
- 6) Connect HHO output **TO THE** Natural gas hose using a unidirectional valve
- 7) **POWER CORD MUST BE EARTHED**
- 8) Turn on and wait; now the Furnace, Boiler or Burner are controlling the HHO generator and will use it as required

How to connect it to a Diesel engine

You must input HHO at the AIR ADMISSION

TURBO SYSTEMS: Connect HHO to the air input (catching air); you cannot feed HHO to the output of the TURBO, due to pressure considerations.



This Picture shows the exact place to enter the HHO at the Turbo air input
This is a Diesel DAF DE 9000 CC,

6: CALCULATIONS GAS /DIESEL

Where can I use it?

Furnaces, Boilers, burners Natural GAS or Diesel, up to 50 KW

Example : a 40 kW/h boiler (a big home device) system will require 3.7 m³/h Natural GAS or about 1.5 m³/h of Propane or 3.4 Kg/h if Diesel .

3.7 m³/h Natural gas are aprox, 60 LPM , SO the HHO generator will ADD additional 10 LPM , that will increment flame size about 30% , and temperature about 250C increasing efficiency about 50% , so now you can reduce GAS input (most are adjustable) change from position 40KW to 20KW and you will continue getting same heat from the system but saving a lot of fuel, AND REDUCING YOUR CARBON FOOTPRINT

The 2.2KW power you are using now is about the same power used by a domestic electric heater you need for a medium size room

This is just a suggested operation range, HHO may be added to Gas a substitute it up to 80 %

11: Maintenance

IF your water is not top quality, please use a filter

This Generator does not require any

maintenance as long as your water is top quality



ECONOMIZADOR DE HIDROXIDO

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Exclusively made for

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