



TECHNICAL SPECIFICATION

Product:

HYDROGEN CARBON CLEANING machine „HCC-5000“ – V.PRO

HCC-5000 machine for production of Oxy-Hydrogen gas by electrolysis of distilled/demineralized water, intended for removing carbon deposits from internal parts in IC (Internal Combustion) engines.

Description

Technical data:

Maximum production of Oxy-Hydrogen Gas –

1800 L/h (30 L/min.) – LIMITED

(max. technical possibility - 2100 L/hour)

Maximum power consumption – 4.4 KWh

Maximum water consumption – 1.0 L/h

Maximum pressure in installation – 0.1 bar (1.45 psi)

Electrolyte – 30% Potassium-Hydroxide and Demineral. Water

Environment working temperature – minus 20°C (water and gas system)

Dimensions and weights*

Length 1160mm (+170mm cable holder)

Height 1210mm

Width 540mm (+170mm hose holder)

Weight 300kg



Basic elements

1. Box
2. Electrolysis Cell
3. Reservoirs
4. Power supply
5. Control system and electronics
6. Electrical junction box
7. Additional elements



1. Box

The box is made from steel, inside separated into 4 chambers, divided with steel sheet. Each chamber is for separate elements: cell and reservoirs, power supply, electrical junction box and electronics. The box is set on 4 big wheels (125mm diameter), 2 fixed and 2 rotated with brakes. The box comes in black finish with 2 sides in transparent blue acrylic glass.

2. Cell

The cell is the main part for electro-chemical process, known as electrolysis of water, which produces Oxy-Hydrogen gas. It's made of 23 electrodes (stainless steel plates), isolated with 22 plastic frames. The cell also consists of inlets for electrolyte and outlets for Oxy-Hydrogen gas.

3. Reservoirs**

There is one reservoir with double function for electrolyte and gas collection, made of polypropylene, with cap with pressure/vacuum valve, for water refiling.

4. Power supply

High quality AC/DC convertor, with additional elements. Input is AC from el. grid, three-phase electric power 380/60HZ; output is 20-30V DC up to 200 Amps. Power unit is air-cooled with fans and power cable with compatible socket for your market.

5. Control unit***

PLC (Programmable Logic Controller), position is in separate isolated box. The PLC is managing processes of proper operation of the HCC machine and it's connected with external touch screen display (HMI).

6. Electrical junction box

Box for fuses, switches, wires and all energy parts, controlled and managed by PLC.

7. Additional elements

- Interface with touch screen (HMI) for managing and control of the HCC unit
- ON/OFF and emergency switches
- Cooling fan (2- speed depends of the Cell temperature)
- Rubber hose for H2/O2 gas
- Power cable
- **SAFETY** Industrial pressure sensor (gas installation), industrial safety pressure valve, 2 water level sensors, temperature sensor for the cell, etc. (all components are certificated for use in explosive and chemical aggressive environment – Hydrogen, Oxygen, KOH),
- **Flame arrestor**, Certificated for Oxy-Hydrogen gas
- **GPRS modem****** with Data SIM card or/and WiFi (remote controlling of the process, maintenance, position and alarms on the machine) – IOT Connectivity
- **A/D electronic** for electrolysis Cell energy balance
- High quality door handles with locks
- Operation manual and instructions – 1 pcs.
- **CE certificated (CE mark for EU)**
- **FCC standard (US and Canada) – in procedure**



**the manufacturer "Hydrogen Technologies" reserves the right to change some dimensions and weight during the process of the production*

***for delivery, reservoirs are empty, without electrolyte or water and without Oxy-Hydrogen gas inside the system. However, the system will still have all characteristics as described in the section "technical data" after adding electrolyte mixture (mixture of demineralized water and potassium-hydroxide) according to the instructions.*

****PLC prepared for remote control of the unit, with control of the position and status of the machine.*

****GPRS modem is installed if customer sign SERVICE PACKEG or Franchise Agreement, which include remote controlling, remote maintenance, data tracking, etc.

Warranty

Standard Warranty period is 2 years, on all parts, **or by the terms of Franchise or special Service Package Agreement/Contract.** Warranty does NOT include breakdowns or failures caused by unprofessional handling, contrary to operation and service manual or intentional damage.

Packaging

Euro pallet (1200x800mm), protected and ready to transport.

Delivery

Ex Works, ready to transport, 30 days after down payment. For the machines on stock, delivery period is 7 days after complete payment.

End payment and shipment terms

Upon proof of working order, payment is to be made once both parties mutually agree acceptance of a machine. Payment is to be made once item has been loaded on to the pallet and confirmed as shipment ready. Payment will be made prior to shipment or movement of the goods from "Hydrogen Technologies" offices, Belgrade. **At no circumstances can the shipment be released prior to payment.**

Note: All costs regarding VAT, customs fees and obligations will be paid to the customer in accordance with laws and regulations under the laws of country of import. Tariff number of the machine, for the customs purposes, is **8543 30 70.**



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