

OPERATION MANUAL

KingKar Eco-technologies Co.,Ltd



HHO Carbon cleaner 6.0

Please read this manual carefully and follow its instruction!

- ❖ For your safety, please assemble, maintain, check and repair the equipment by the professionals.
- ❖ For your safety, please pay much attention to the safety instructions in the manual, and operate by the professionals.
- ❖ Please put it together with Certificate of Quality in certain place to ensure the relevant person can read it at any time.

Special Attention to Operation and Safe Items

1. In the process of carbon cleaning, if engine flame out unexpectedly, please process strictly in accordance with the "Annex III: The operation introduction of engine flame out".
2. In the process of carbon cleaning, the connecting tube between engine and machine must be a negative pressure port, the negative pressure value -20K is appropriate; it is prohibited pass hydrogen and oxygen gas into the air filter directly.
3. In the process of carbon cleaning, it is forbidden to enter the cab for vehicle operation, especially step on accelerate.
4. In the process of carbon cleaning, processing the other engine maintenance items is prohibited.
5. In the process of carbon cleaning, it is prohibited to operate the machine by two people at same time;
6. In the process of carbon cleaning, it is prohibited to standing front near the car engine.
7. In the process of carbon cleaning, it is prohibited to open automobile air-conditioning, multimedia and so on;
8. Before using the equipment for carbon cleaning, please check whether the vacuum sensor is workable, if not, please replaced it by a new one can be used for carbon cleaning. The above points must be adhered strictly in order to avoid any security accident.

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1. Preface

The manual is the instruction of use, maintenance and safety precautions for HHO Carbon Cleaner 6.0. File will explain and instruct on how to connect the HHO Carbon Cleaner 6.0 with vehicles, to remove carbon deposits in the car or truck engine, as well as the operation of the machine's safety precautions and contains the instruction of spare parts, etc.

1.1 Purpose and expected results

With the increasing of engine useful life and the complexity of automobile use environment, carbon in car engine system will accumulate in the engine block, piston top, catalytic surfaces and other parts. Carbon deposits will cause engine start performance reduction, fuel consumption increasing, emissions of non-compliance and other serious problems and safety hazards. HHO Carbon Cleaner 6.0 takes the advantage of the high-energy characteristics and catalytic properties of Oxy-hydrogen gas, adds the Oxy-hydrogen gas and carbon cleaner agent into the engine combustion chamber through the engine idling to remove carbon deposits inside the engine, restore the original engine performance, improve throttle response speed and reduce emissions. The fuel will be combusted more efficient, fuel consumption reduced, engine life extended.

The equipment is mainly used for cleaning carbon deposits in vehicle engine system. When there is a problem of the vehicle as following, please solve the problem before using the device:

- (1) Unstable idle
- (2) Piston ring seal failure, burning oil
- (3) Spark ignition system of aging
- (4) Nozzle clogging
- (5) Air intake and exhaust system seal failure

1.2 Operating Conditions

Normal operation requirements of HHO Carbon Cleaner 6.0:

- (1) Stable single-phase 220v power supply, carbon cleaning solution and good ventilation.
- (2) Applies to the petrol engine and diesel engines,Oxy-hydrogen outlet hose connected to the negative end of the car's engine intake manifold. Note: If the car traveled 30 minutes or more before, please open the hood and turn off the engine to rest 10 minutes to make sure the engine idling normally. Please make sure the fuel supply is enough during operation.

2. Installation

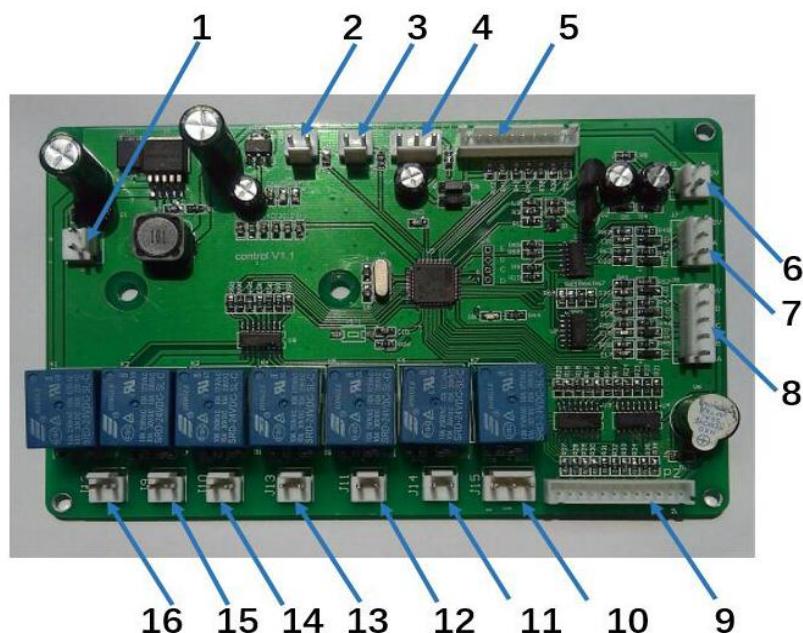
2.1 Before installation, please confirm:

- (1) HHO Carbon Cleaner 6.0 should be installed on the ground of the smooth, clean and stable ground.
- (2) The equipment should adopt single phase electric power. Please make sure that the circuit input voltage is $\pm 10\%$ industrial electricity, and establish appropriate ground wire connection.
- (3) We recommend placing this machine in open space with good ventilation.
- (4) The distance between the car and machine should be less than 10 meters; it is better control in 5 meters.

2.2 Add carbon cleaning solution in the first time

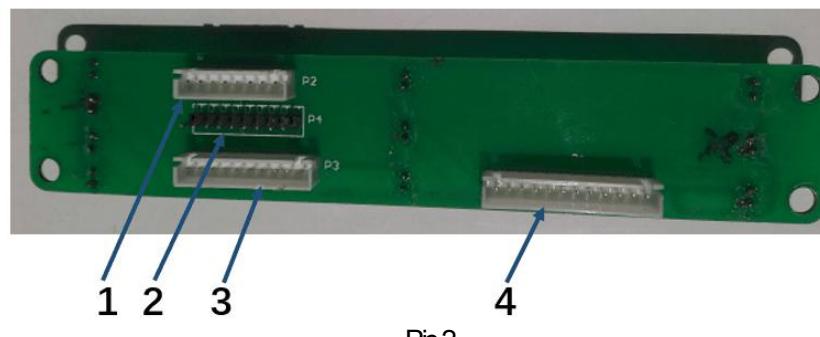
Note: All overseas customers, due to the customs is prohibited to carry liquid, the machine we send are without solution. So must add carbon cleaning solution in first time use, please refer to the annex 4.

2.3 Electrical wiring diagram (only for principle instructions, when using please be subject to physical machine and operation manual)



Pic-1

1	24V DC interface
2	over temperature detection input
3	over pressure detection input
4	vibration sensor detection input
5	control panel interface
6	gas production adjustment interface
7	cleaner agent and negative pressure detection input
8	water level probe and anti-backfire probe detection input
9	indicator light interface
10	power protection solenoid valve
11	AC contactor interface
12	alarm solenoid valve
13	adding water solenoid valve
14	cleaner agent solenoid valve
15	AC contactor
16	exhaust solenoid valve

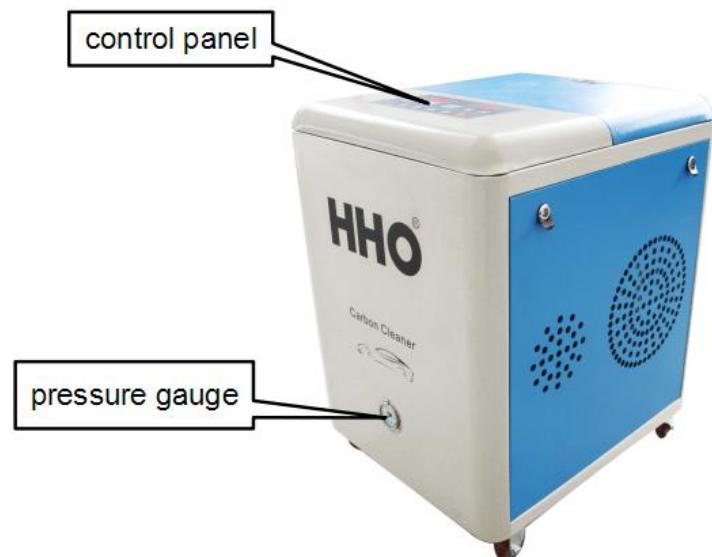


Pic-2

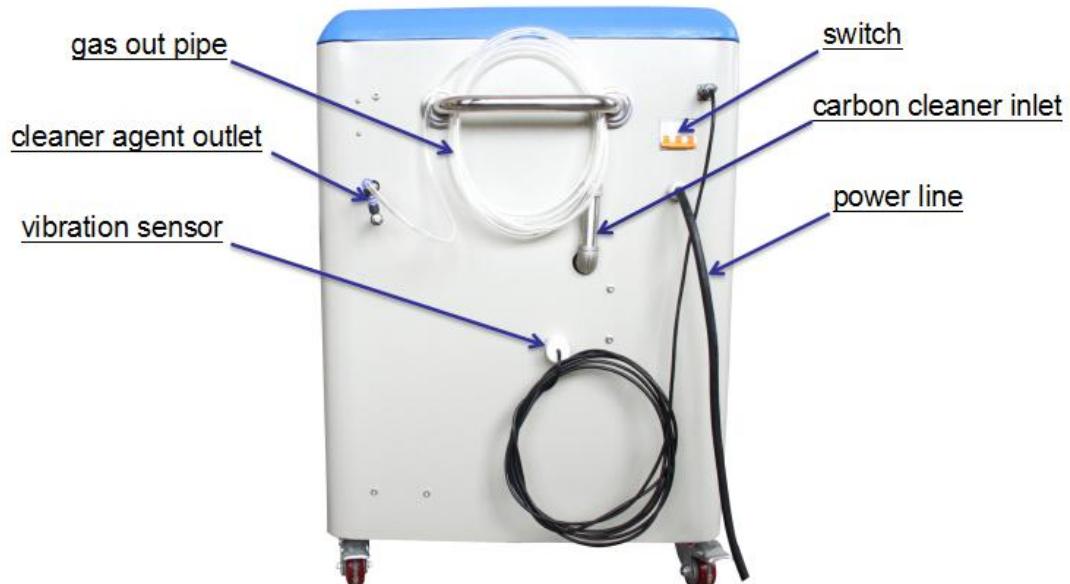
1	timer interface
2	panel button interface
3	Control panel interface
4	indicator light interface

3.The introduction of machine structure

3.1 Outside structure



Pic-3 (Front)



Pic-4 (Back)



Pic-5 (Control panel)



Pic-6 (Circuit Control System Module)

3.2 Inside structure



Pic-7 (Left-side)



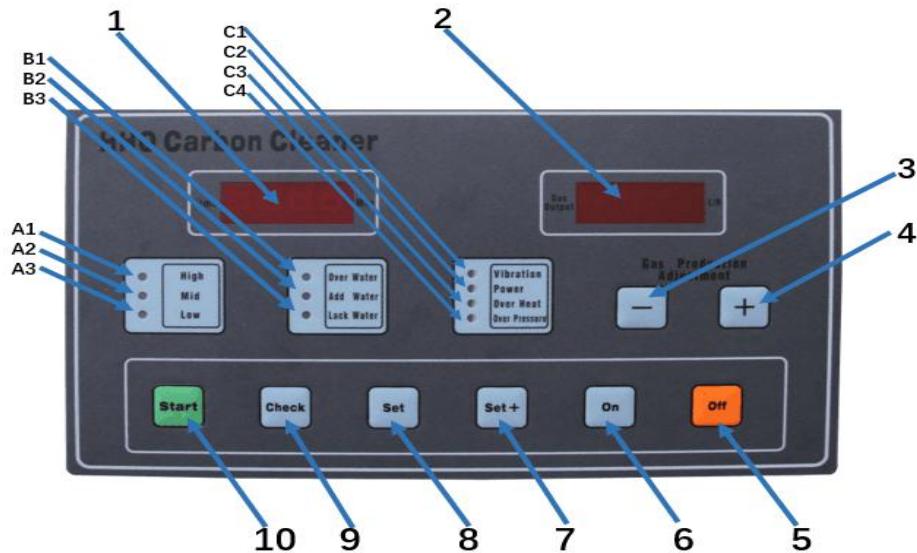
Pic-8 (right-side)



Pic-9 (top-side)

3.3 Control Panel Introduction

(1) Front panel introduction



Pic-10

HHO carbon cleaner 6.0 control panel as showing in Pic-9, detail description as following.

No.	Name	Function
1	time display	display carbon cleaning time parameter
A1	high water level	the light on, when the water higher than high level, otherwise the light will not be bright
A2	mid water level	the light on, when the water higher than mid level, otherwise the light will not be bright
A3	low water level	the light on, when the water lower than low level, otherwise the light will not be bright
B1	over water indicator	the light on, when solenoid valve broken and stop draining off water
B2	add water indicator	the light on, when water lower than lowest set level. machine stops.
B3	lack water indicator	the light on, when water lower than mid level. machine stops.
C1	vibration indicator	the light on, when vibrating sensor works
C2	Power supply indicator	the light on, when turn on power switch
C3	over heat	the light on, when working temperature is over heat. machine stops
C4	over pressure	the light on, when working pressure reaches 0.2mpa. machine stops
2	gas production display	display the value of HHO gas production.(L/hr)
3	gas production adjustment -	decrease gas output
4	gas production adjustment +	Increase gas output

5	off	machine stop working
6	on	machine start working
7	set +	start time setting
8	set	enter the time setting state
9	check	check accumulated working times
10	start	start producing gas

Over pressure indicator: Once the pressure reaches 0.2mpa, the light on, machine will stop producing gas. during carbon cleaning process, the light is not bright.

Over heat indicator: when the electrolytic temperature is higher than set temperature, the light on, machine will stop producing gas. The light is not bright under normal conditions, unless the fan is not working or poor cooling.

Adding Water Indicator: When the water level of water tank is low, Adding Water Indicator will on. At this time, you need to open the cover at the top of machine, add water to the water tank through the filling opening. Adding until the indicator light off, should stop adding water. If Adding Water Indicator light turns on, but without timely adding water, it will cause to lack of water and the machine will automatically shut down.

Set: It is to set the time of carbon cleaning, the time setting is according to the time of cleaning, normally 20 minutes.

Set+ : We assume the the four-digit timer display is shown as:AB:CD, first press the setting button to enter setting mode. it displays D, you can press the timing button continuously the digit D circularly ranges from 0 to 9. if you want to set the C digit, and then press the settings button, the operation of setting A or B is the same. Under normal circumstances, set the timer at 20:00 minutes.

Pressure gauge: it is used for displaying the internal abnormal pressure value of carbon cleaning machine supply system. Since catalyzed oxyhydrogen gas is vacuum inhaled into the car engine, so the gauge keep the normal value; when excessive gas is gathered in the machine, or external gas is blocked, the gauge pointer will rise when the pressure reaches 0.2Mpa. At then the machine will be in the state of protection, it will stop producing gas. When the internal gas fully leak out, the machine automatically resume gas production

Note:

As the car model is FAW-Volkswagen Bora or Buick Excelle two models, if the machine appears shut down constantly, because the vacuum tube is smaller than other car, it should set the gas production as 700-800L/h; the machine can do carbon cleaning normal later.

If do carbon cleaning for diesel car, please connect with air filter, and use provided connector.

4. Checking before Debugging

Please accord the following safety instruction to ensure operation safety after installed machine.

4.1- The machine should be placed in ventilated and dry place, the surroundings temperature shall not be lower than 0°C, the highest temperature shall not be higher than 40°C, relative humidity shall not be exceed 90%.

4.2- The machine should be placed on smooth, clean and dry ground.

4.3- Please do not place heavy objects on the machine. If necessary, please turn off the machine and clean up the shell with half wet dishcloth. Please do not use any solvent to clean the machine.

4.4- We suggest the maximum length of the gas pipe shall not be exceed 10m. And the power supply wire shall not exceed 15m.

4.5- Please make sure the Power Switch are turned off before connect the power line.

4.6- Please check all the power line are connected solid and reliable before start any power supply.

4.7- We suggest place the machine in a fixed location, forbid to move the machine during carbon cleaning.

4.8- Before start the machine, please make sure the car have enough petrol, so that the car can idle running more than 20 minutes without stop. Before do carbon cleaning for the car, please make sure there is no other bad auto fault (such as unstable idle speed, oil leakage, smoke, engine knock, ignition system failure, oil system failure etc).

5. Prepare Work before Start the Machine

5.1- Press On button in the front panel of the machine, Power Supply Indicator will light. During self-inspection of the machine, other indicator generally will light for a few seconds, this is normal.

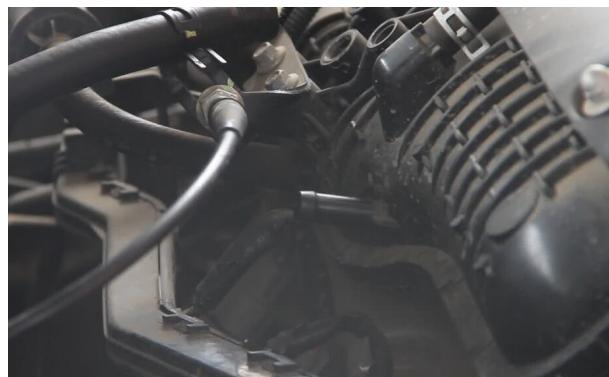
5.2- During machine's self-inspection, the machine will detect the water level, it possibly will appear Adding Water Indicator or Lacking Water indicator light and anti-backfire tanker's water level automatically control.

5.3- Please observe the machine's front panel. If the light of Adding Water Indicator on, and

the lights of high level and mid level are not bright, you should turn off the machine, open the machine over, add 4L water to the tank from the filling opening through funnel.

6.The Working Process of Carbon Cleaning

- 6.1- Add carbon cleaner agent (the machine doesn't work without carbon cleaner agent)
- 6.2- Please make sure that the prepared work have done.
- 6.3- Please make sure the car in stationary state, have flamed out. Automobile clutch in park sated and hand brake state, these will avoid car slide accidental. Once again confirm the automotive fuel is enough for car running for 20 minutes at idling speed.
- 6.4- Open the front engine cover and make it reliable support.
- 6.5- To find out and confirm the vacuum tube (it generally connected with the brake vacuum pump), and disconnect it with the vacuum pump. As shown in the picture below (take TRITEC for example):

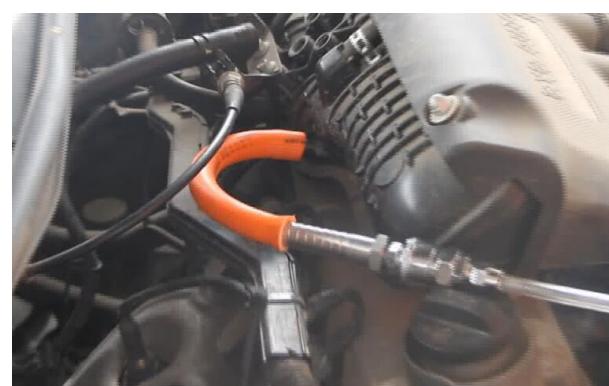


Pic-11

- 6.6- Connect the gas output tube of the HHO Carbon Cleaning Machine with the vacuum tube of car, and lock it tightly. As shown below:



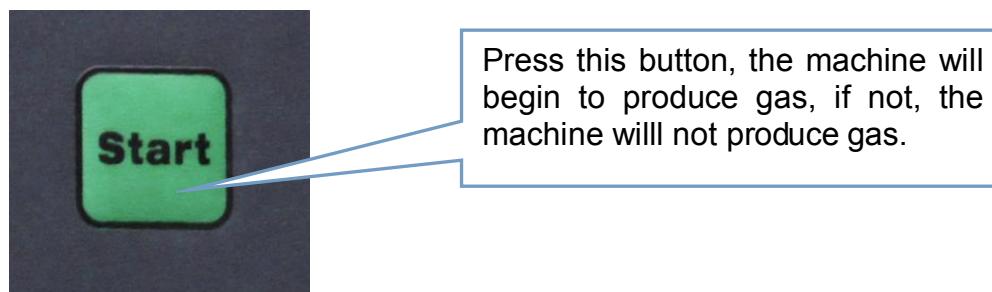
Pic-12



6.7- Start the engine at idling speed. If not, the HHO Carbon Cleaner 6.0 will not work.

6.8- Once again confirmed that the Power Switch of the machine is open, if not, please open it.

6.9- Press the Start button in the front panel of HHO Carbon Cleaner 6.0. It will start working, the countdown time begin, at the same time machine will receive work instruction.



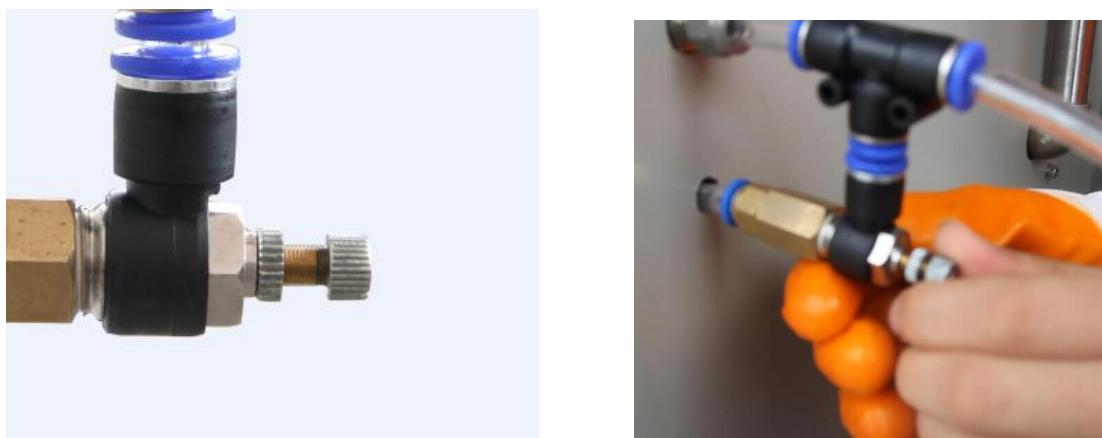
Pic-13

6.10- Adjust Gas Output until it turns to 1000-1200L.



Pic-14

6.11- Adjust the valve to control the speed of cleaner agent flow.



Pic-15

6.12- Carbon cleaning process.....

- ◆ Carbon cleaning will last until the time you set, HHO Carbon Cleaner 6.0 have the countdown function, you can see the remaining the time from the panel.
- ◆ In the process of carbon cleaning, you can look the working state of the machine, if appear water adding tips, please don't stop the machine immediately, after finishing carbon cleaning process, then add water. If appear engine flameout, please process according to The Operation Introduction of Engine Flameout.

Notice: If the machine appears power outage or other abnormal, should immediately stop carbon cleaning.

- ◆ The method to stop carbon cleaning: press OFF button, and close the Power Switch, let the car work for 3 minutes on idle speed to discharge the remaining gas.

6.13-The countdown time is 00:00, the system will automatically cut off electrolytic power, stop to produce oxy-hydrogen gas.

6.14-Continue to wait for 1 minute so that complete the transportation of the rest oxy-hydrogen gas.

6.15- Let the engine flameout and connect the car vacuum tube with the vacuum pump, ensure the connection is reliable and will not leakage.

6.16-Re-start the car engine.

6.17- Speed up to 3000-3500 rpm under idle running. Loosen the throttle and interval to 3 seconds. Repeat 6 times, you will see the discharge of the water and dirt out of exhaust pipe.

6.18-Carbon cleaning is over.

7. Fault analysis and elimination

When the machine appears the bellowing faults, the corresponding indicator will turn on, the worker should analysis the fault timely and eliminate it.

No	Fault phenomenon	Reason analysis	Elimination method
1	Working indicator is not bright after opening power switch.	The Power Switch has damaged or power line is not connected well.	a.Replace the Power Switch b.Connect the power line well

2	Machine cannot start	a. Without adding cleaner agent b. The power line have not connected well, Power Switch or AC contactor have damaged.	a.adding cleaner agent b.Connect the power line and earthing sign; Replace fault components.
3	Machine doesn't work after pressing Start button.	The negative sensor is broken	a. Change negative sensor b. Use vibrating sensor
4	The gas output screen display normal, appear gas production insufficient.	Gas output pipe damaged, or exist leakage phenomenon in pipe connection, pressure release valve of water tank or pipe joint, or pressure gauge is damaged.	Replace gas out pipe, tighten the interface, replace sealing element and pressure relief valve of main water tank, replace pressure gauge.
5	Appear flameout during carbon cleaning process	A.heavy deposited carbon in engine. B.Car engine idling unstable	Remove the gas tube from car's vacuum tube immediately.Blowing the engine and air intake tube by using compressed gas
6	Over pressure and do not produce gas	A. Pressure sensor is broken. B. Water gas separator is blocked.	A. Change pressure sensor B. Clean water gas separator or change it
7	Over heat and do not produce gas	A. Temperature control sensor is broken. B. The fan doesn't work.	A. Change temperature control sensor B. Change the fan
	Over heat and do not produce gas	A. No water in generator B.control panel wire loosen	A. Add water B. Fasten the wire

All device fault should be examined and eliminated by specialist!

8. Notice

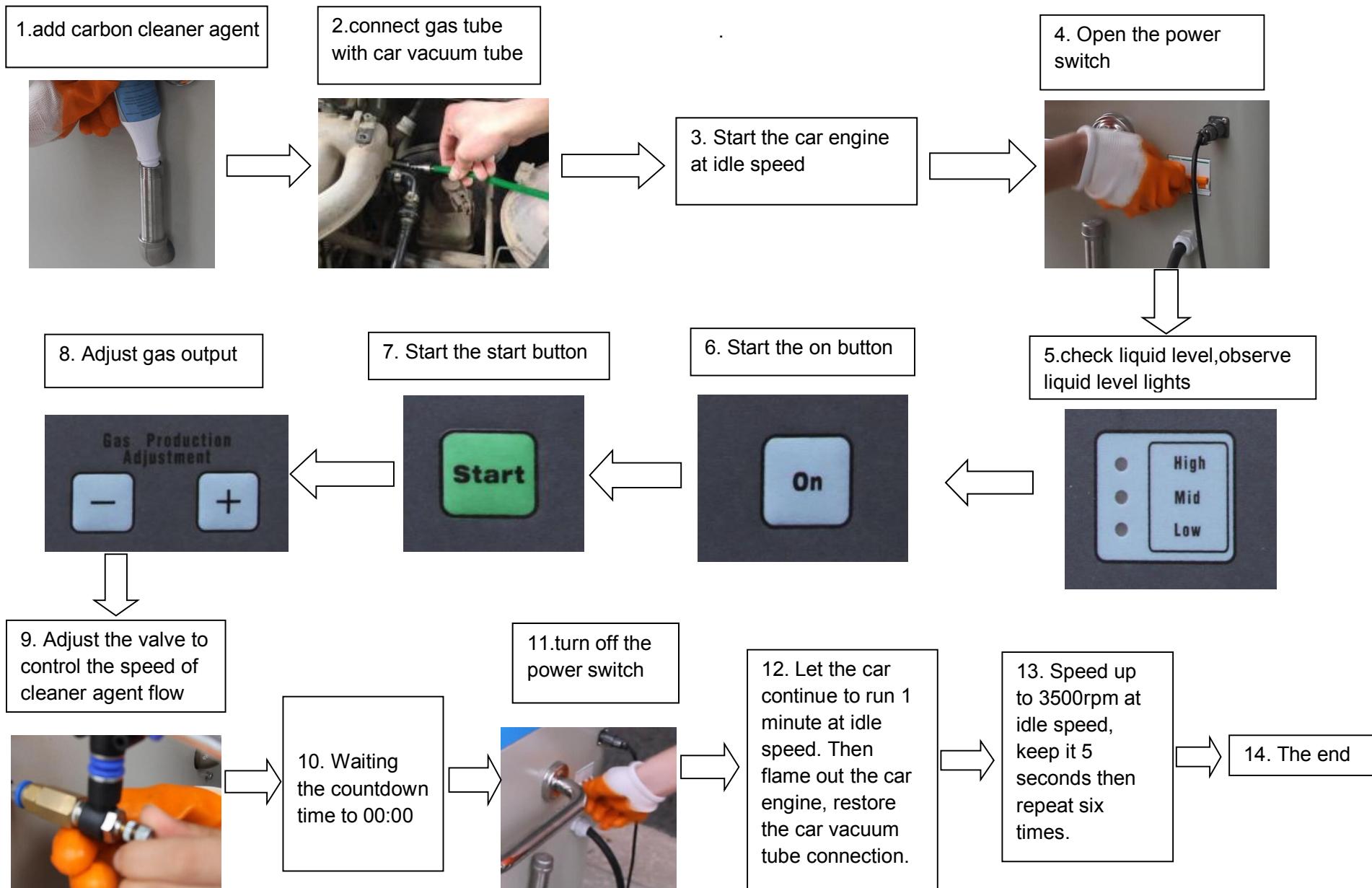
- 8.1- The machine power input cable should be reliable connection, the machine should be fixed installation, free move should be prohibited.
- 8.2- The gas pipe connection should be properly sealed, prevent air leakage.
- 8.3- The working medium of the machine is carbon cleaning solution and electricity. The power supply should be single-phases, 220V, please take care your device.
- 8.4- Pure water will be consumed during carbon cleaning, when display water adding tips, after finishing carbon cleaning, please add 4 Liter pure water to water tank of the machine.
- 8.5- If appear engine flameout during carbon cleaning, please process according to The Operation Introduction of Engine Flameout (For more details, please read Annex3).
- 8.6- Regularly blowing dust inside the machine using the compressed air machine once a month. Replacing the electrolyte and cleaning the electrolytic cell for twelve month.

9. Maintenance of the Machine

(The Introduction of Electrolytic Cell's Cleaning and Electrolyte's Replacing)

- 9.1- Turn off the Power Switch.
- 9.2- Put the machine in outdoors.
- 9.3- Refer to the “Annex4: The operation introduction of adding solution in the first time”, remove the water level sensor in the electrolytic cell, expose the filling opening.
- 9.4- Open the drainage valve under the electrolytic cell, forward and back shake the machine during drainage process, try to get rid of the dirt.
- 9.5- Close the valve when the liquid flow out totally.
- 9.6- Add water for the electrolytic cell until it left 10cm from the filling opening to the water level.
- 9.7- Repeat the steps from 9.4-9.6 five times, until the exhaust liquid is clean.
- 9.8- According “ Annex4: The operation introduction of adding solution in the first time” to add the electrolyte for eletrolytic cell. Electrolyte replacement is done.

Annex1: The Workflow Chart of HHO Carbon Cleaning Machine



Annex2: Notice of using HHO Carbon Cleaning Machine

1. The machine adopts single phases 220V power supply, if the voltage does not match or lack of phase, the machine cannot work properly.
2. The machine use carbon cleaning solution as working medium, other media are prohibited. If you use other media, the machine can't identify and will alarm to stop working. And it will also cause damage to the machine.
3. The machine in the running process, if Adding Water Indicator shows green, after finishing carbon cleaning, please add 4 Liter pure water to water tank of the machine immediately.

During carbon cleaning process, if appear engine flameout, don't re-start the engine, please deal with according to operation introduction in Annex3. Details as following:

- 1) Turn off the Power Switch.
- 2) Use compressed air blowing the engine and air intake pipe to clean the remaining Oxy-hydrogen gas.
3. In the processing of using, if the fan doesn't work, will cause over heat indicator light or over temperature indicator light on, at this time, we should find the reason cause the fan's failure. We should find out it is fan's power input or internal circuit breaker that cause the fan's failure.
5. Don't put stuff on the machine, please clean the dust regularly. You should replace electrolyte for the electrolytic cell once every twelve month.

Annex3: The operation introduction of engine flameout

Note: If the engine flameout during work, prohibit re-start the engine. Please deal with as following:

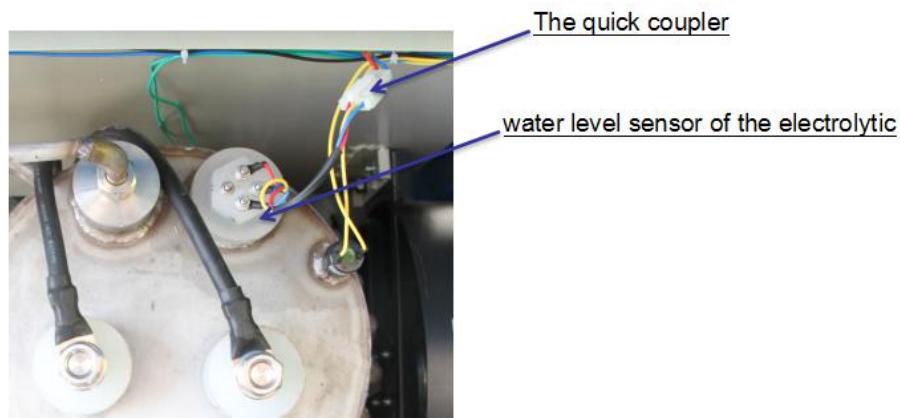
- A. Turn off the Power Switch.
- B. Remove the machine's gas tube from car's vacuum tube.
- C. Blowing the engine and air intake tube by using compressed gas, keep 3 minutes, discharge all the remaining Oxy-hydrogen gas, and then keep rest for 5 minutes.
- Note: Before finishing above operations, re-start car is forbidden.
- D. Return back the car's vacuum tube, start the car, keep in idling speed for 1 minute, check no abnormal situation, flameout.
- E. Re-starting the carbon cleaning process after completing all the above operations.

Annex4: Instruction of Electrolytic Solution's Making and adding**1. Preparation:**

1pc Stainless steel container (40kgs volume),
1pc Electronic balance (40kgs),
1pc Stainless steel bucket (15kgs volume),
1pc stainless steel spoons,
1pc concentration hydrometer,
KOH(concentration≥95%)
Purified water
1 bottle table vinegar,
1pair rubber gloves,
Other protective articles

2. Make make up the electrolyte, add it electrolyte for the machine.

Model	KOH (Purity ≥95%)	Pure Water
HHO carbon cleaner 6.0	8kg	20kg

1) Open the machine's cover, find the position to add solution, as shown below:

Pic-15

2). In the quick coupler, disconnect the water level sensor with the wire. Then unscrew the water level sensor from counterclockwise, take it out.



Pic-16

This is the filling opening, as show be below:



Pic-17

3). Add the electrolyte for the machine(You must wear safety goggles and silicone glove when conduct this step).

You should prepared these: one big stainless steel funnel, one stainless steel spoon, one stainless steel kettle, a pair of silicone gloves, a set of safety goggles.

Pour the electrolyte into the stainless steel kettle, then add electrolyte to the electrolytic cell slowly through the funnel.



Pic-18

Note:

- a. You must be slowly when add electrolyte. Liquid leakage is prohibited, especially can't flow to the circuit board.
- b. You should notice the internal solution when add electrolyte. Stop adding electrolyte when there is only 10cm from the water level to the filling opening.

4) Return the water level sensor, fix and seal it. Reconnect the water level sensor with the quick coupler. As shown below(returned to their original state):



Pic-19

5). Add water to the water tank. As below picture showing: open the cover on the water tank, add water through funnel.



pic-20

Certificate of Quality & Warranty

Machine Name	HHO Carbon Cleaner 6.0
Product Number	
Power Input	220V / Single phases
QA Tester	
Date of Test	
Date of delivery	

This Machine tests well! Allow delivery.

We supply one year free of charge quality maintenance since sold out. After one year, only charge raw material fees. Physical damage is not within the scope of warranty.

Without our written authorization, any organization or individual does not allow to copy this manual all or part in any form (except the simple reference in reviews or comments).

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