



Sterilization tornado

ESS1 Extraoral suction system



Device parameters

HEPA filtration : 0.3 μ m objects

Filtration Class : H13-H14

Main unit dimension: 350mm \times 395mm \times 671mm

Swing arm dimension: ϕ 50mm \times 1621mm

Brushless motor useful life: 10 years

Maximum suction flow : 3000L/min

Maximum suction : 10 KPa

Plasma sterilization : Medical-grade

Filter useful life reminder : Yes

Adjustable wind power : Yes

Self-sterilization function: Sterilize the whole machine including swing arm, main unit, HEPA filter by built-in ozone generator.

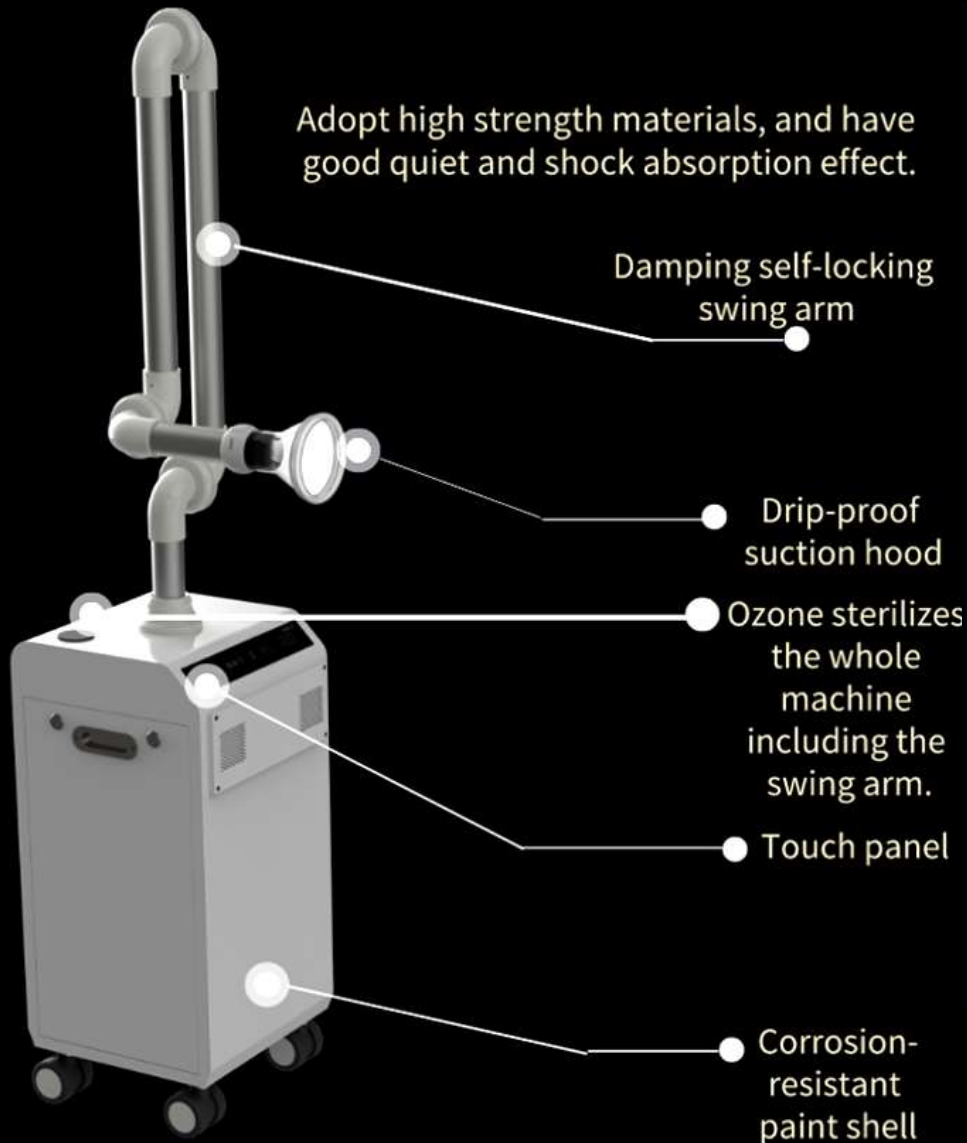
Drip-proof suction hood : Yes

Avoid dust : Exhaust from the back of the upper main unit

Operation interface : Touch screen



Function introduction



Drip-proof suction hood

effectively avoids water mist to agglutinate, drip and cause pollution after machine stops working.



Damping self-locking swing arm

can be changed the angle at will, and no needed to tighten and loose the nut during working process.



Waterproof touch panel

is resistant to corrosion and cleaning, avoids exposure to drugs that may affects its useful life.



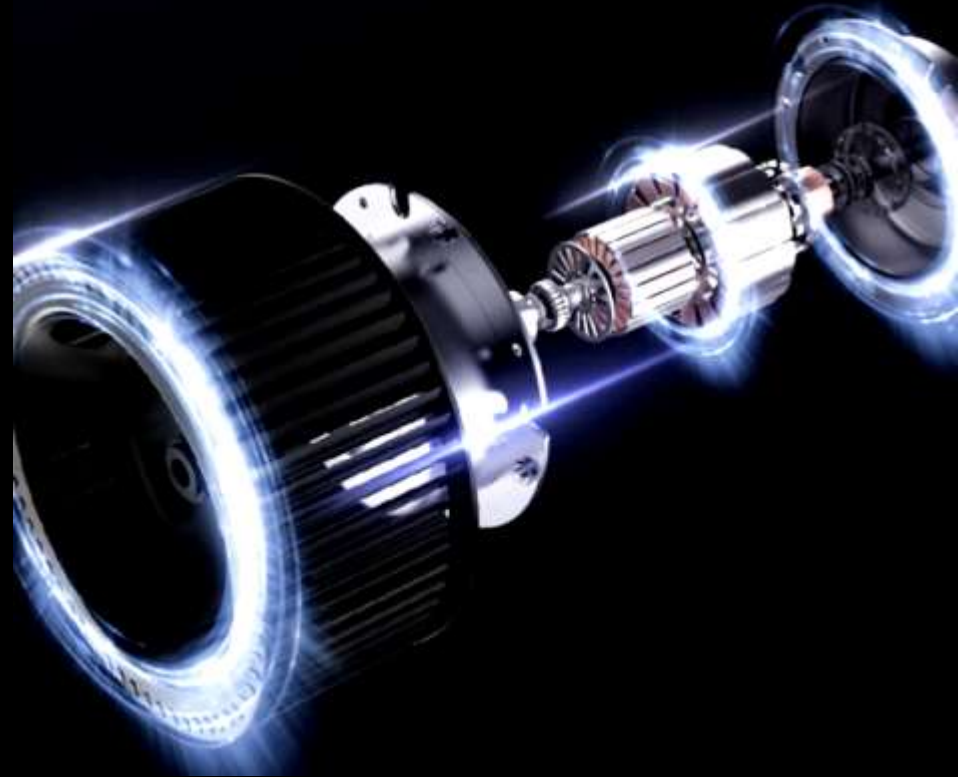
Turbine blade

makes wind power stronger less noise quieter

Core power

800W brushless motor,
all copper movement

Turbine blade
makes wind power stronger
less noise
quieter



Innovative design

Suck and separate moisture and air out of aerosol by double steel tubes

Moisture and air are separated out of aerosol through tornado centrifugal separation. That will effectively protect the HEPA filter not to be blocked due to moisture, and then extend its useful life.

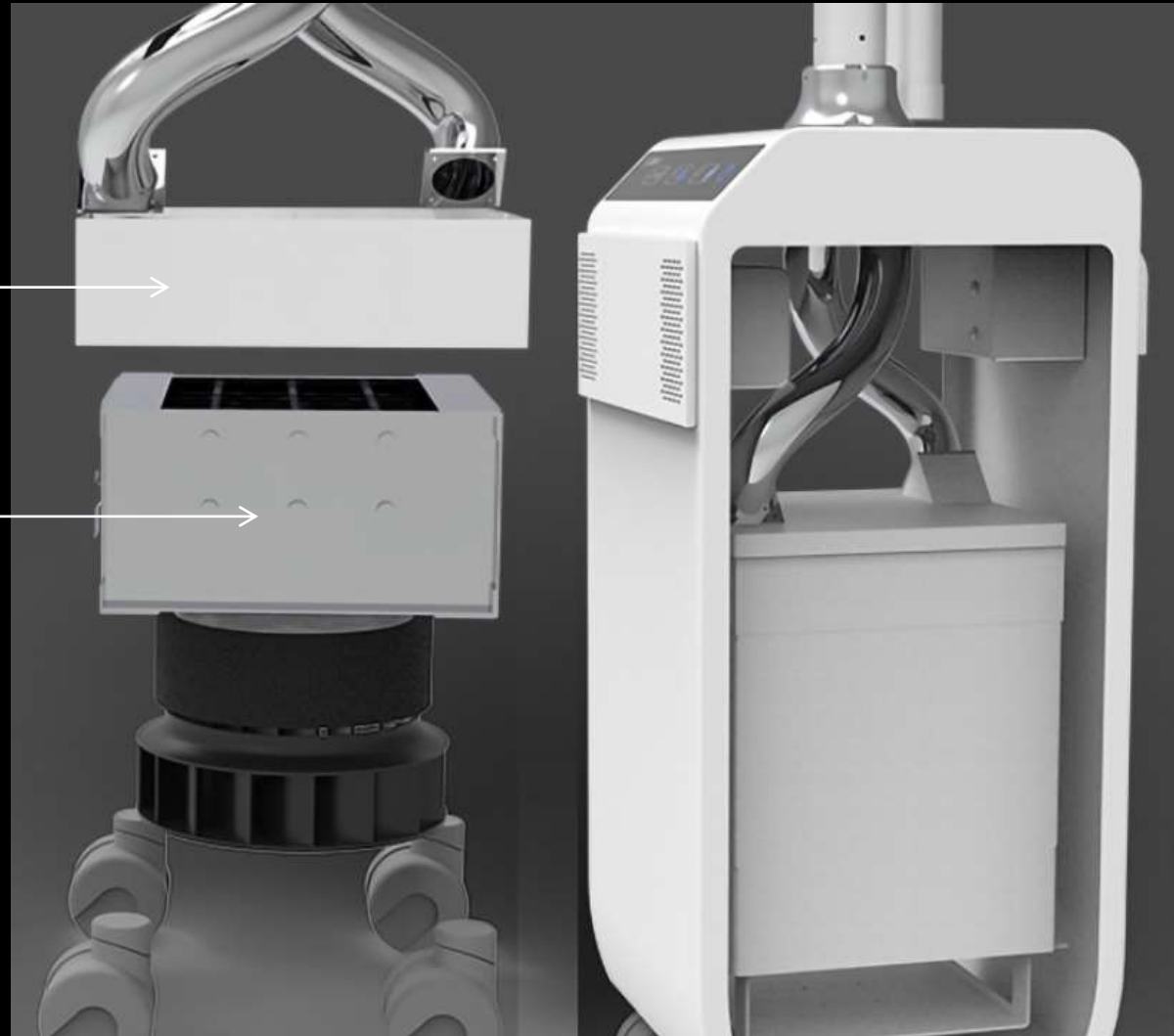


Innovative design

HEPA filter

Medical-grade plasma
sterilization

The plasma sterilization is mainly used for the one-time sterilization of the flowing air during suction. The test result as following:
PM2.5 one-time pass purification efficiency: 95.3%
Microorganisms one-time pass purification efficiency: 93.1%



Test report

The above parameters indicate that the plasma generator is safe and effective for one-time filtration (adsorption and killing) of microorganisms. This method solves the problem that the UV sterilization of the existing products in the market has a short irradiation time on the fast-moving air and the killing effect is affected significantly.

检 验 报 告					
报告编号: 2016AC144		共 3 页 第 2 页			
样品编号	2016AC144				
检 验 条 件					
风速为 2.0m/s, 有效进风面尺寸为 280mm×135mm。					
检 验 结 果					
序号	检验项目	单位	标准要求	检验结果	单项判定
1	PM2.5 一次通过净化效率	%	/	95.3	/
2	微生物一次通过净化效率	%	≥50%	93.1	合格
3	臭氧浓度增加量	Mg/m ³	<0.16	0.038	合格
4	阻力	Pa	/	16.1	/
1. PM2.5 一次通过净化效率试验: 装置前 PM2.5 浓度为 0.687mg/m ³ , 装置后 PM2.5 浓度为 0.032 mg/m ³ 。 以下空白。					

Sterilization by ozone

Self-sterilization function

Baolai ESS1 extraoral suction system adopts high-tech sterilization system and special design of moisture and air separated out of aerosol through tornado centrifugal separation, which greatly improve the useful life of HEPA filter. The plasma generator can kill the bacteria in the air instantly to achieve safe discharge. The built-in ozone generator can sterilize the whole machine including swing arm, main unit, HEPA filter to achieve self-sterilization effect.



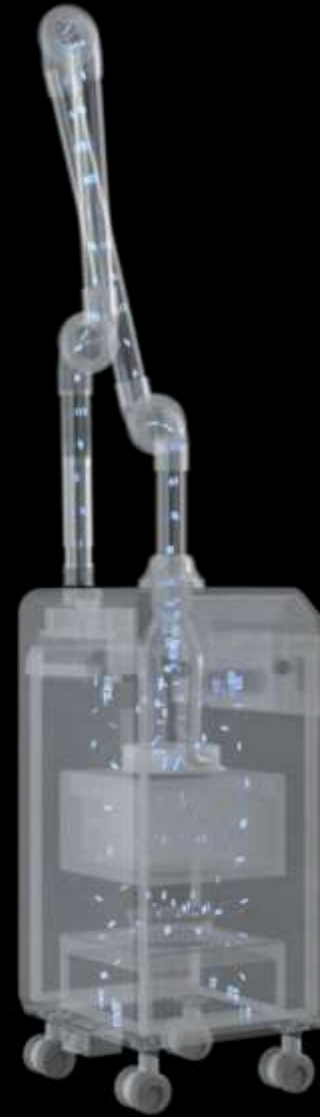
Ozone

COVID - 19

CORONAVIRUS



Ozone treatment



FAQ of Baolai ESS1 extraoral suction system

- Q: “Medical grade ozone + plasma” sterilization-- Some people are worry about ozone which maybe can cause cancer. How can you proof this machine doesn't have this health risk?
- A:1) IOA (International Ozone Association) and some countries have set related standards, which explain at what concentration of ozone the human body is exposed to and for how long before ozone becomes harmful to human health as following:

Association / Countries	Ozone concentration	Time of exposing to ozone
IOA (International Ozone Association)	0.1ppm	10 hours
America	0.1ppm	8 hours
Germany / France / Japan	0.1ppm	10 hours
China	0.15ppm	8 hours

For more “knowledge of ozone” , please click the link <https://youtu.be/xlwrYAlAESM>
This video was produced by the authoritative national media CCTV (China Central Television).

FAQ of Baolai ESS1 extraoral suction system

- A:2) Sterilize the whole machine including swing arm, main unit, HEPA filter by built-in ozone generator. Ozone only circulates inside the machine. The machine is enclosed to the outside environment when it is working. That means the exhaust valve is closed and the suction inlet is connected to the main unit when it is working.
- A:3) How to use ozone sterilization: Dentist connects the suction inlet to the sterilization connector of main unit, sets up ozone sterilization function well and then starts it when getting off work. Dentist can make a reservation for ozone sterilization, and ozone generates after dentists leave clinic. Ozone sterilization lasts for 60 minutes each time, and then drying lasts for 30 minutes automatically.

The half-life of ozone at room temperature and pressure is 15-30 minutes.

FAQ of Baolai ESS1 extraoral suction system

- The way we have designed is to use the diffusion capacity of ozone to sterilize all the surfaces inside the machine. In this way, bacteria or viruses can be prevented from accumulating and reproducing in the machine. Compared to the existing products in the market using “plasma+UV lamp” sterilization method which can not sterilize the swing arm, our internal sterilization method is more complete, more reliable, more effective, much safer.
- According to the requirements of YY/T 0215-2016 medical ozone sterilization equipment in China, the ozone sterilization concentration for medical appliances should be 20ppm. Ozone level of 50-100 mg per hour per m³ for sterilization 60min.
- Ozone production efficiency is 300mg/h of ozone generator in this machine. Ozone sterilization time is set at 60 minutes each time. The internal space of this machine is less than 1m³. That means ozone sterilization concentration of this machine has reached and exceeded the national medical standards.

FAQ of Baolai ESS1 extraoral suction system

In conclusion: Our engineer had taken ozone hazard into consideration when they designed structure. Ozone is designed for internal circulation sterilization in enclosed spaces. Dentist is required to set up and start ozone sterilization only when getting off work and leaving clinic. Dentist also can make a reservation for ozone sterilization, and ozone generates after dentists leave clinic. Ozone sterilization startup has a reservation mode. Even if the main unit seal fails in extreme conditions, human injuries can be avoided. Considering short half-life of ozone, the ozone almost dissolves after sterilization by the next day, so we think this machine is very safe.



**Less consumables.
More safety guarantee.**

FAQ of Baolai ESS1 extraoral suction system

Tornado centrifugal separation – Where is the moisture goes out? Any trap for moisture before going out?

- This machine is not designed with a drain outlet, because it is not safe. Moisture is treated mainly after ozone sterilization. The machine automatically opens the exhaust valve and uses the air flow to accelerate evaporation of moisture and expel it to external of the machine.
- The wind speed is fast and it contains a lot of moisture during suction. The faster the wind speed, the greater the cyclone inertia, the more obvious the separation effect. In this way, suction effect can avoid to be influenced by HEPA filter which absorbing moisture to add resistance. The separation of particles can also extend the useful life of HEPA filter.
- The wind speed is low during ozone sterilization and internal drying, and inhaled moisture in the air is less. Air flows on the surface of moisture and accelerates its evaporation.

FAQ of Baolai ESS1 extraoral suction system

- HEPA filter – Is this H12, H13 or H14?
- HEPA filter is class H13 at present. Please note that filtration efficiency difference between H13 and H14 is only a little. One is 99.99%, the other is 99.995%. They basically intercept 0.3 μ m objects.
- How often to change HEPA filter?
- HEPA filter useful life is 1500 hours.
- There is HEPA filter replacement reminder function for this machine. When the remaining days are less than 5 days, the status indicator of “Replace HEPA filter” flashes. Please prepare HEPA filter in advance and replace it in time.

FAQ of Baolai ESS1 extraoral suction system

- Plasma generator useful life?
- Plasma generator useful life is more than 5 years. There is plasma generator cleaning reminder function for this machine.
- Motor: Is it brush or brushless? Is it AC or DC motor?
- It is a DC brushless motor with all copper movement. 10 years useful life is much longer than brush motor.
- Negative pressure of this machine – 10 kpa. Other brands – 20 kpa.
- Negative pressure 10 kpa is already enough according to our repeated testing.
- Suction flow rate – other brands are 3000 L/min, what about yours?
- Ours is 3000 L/min. Already enough according to our repeated testing.
- What is difference of this swing arm from other competitors'?
- The angle of this damping self-locking swing arm can be changed at will. No needed to tighten and loose the nut during working process.
- Ultraviolet lamp is optional – Why is this optional in your direction for use?
- This machine uses "Medical grade ozone+plasma" method to achieve sterilization thoroughly, prevent viral cross infection, protect the environment. The way we have designed is to use the diffusion capacity of ozone to sterilize thoroughly all the surfaces inside the machine including swing arm, main unit, HEPA filter. But if customers insist to adopt Ultraviolet lamp, we also can offer it for them. Unit price will increase accordingly.

FAQ of Baolai ESS1 extraoral suction system

- Do you have documents like ISO, CE, FDA, etc. for this machine?
- We have ISO13485, FDA and EC Declaration of Conformity for this machine. Extraoral suction system belongs to Class I medical equipment in China, EU and America.
- Do you have video to introduce this machine?
- Yes, we have. Please click the link <https://youtu.be/VuiCVeIS0-l>
- How to install and use this machine? Do you have video for reference?
- Yes, we have video. Please click the link <https://youtu.be/JQEEZCNHgMg>



About after sales service

We offer one year free warranty to the whole machine and two years free warranty to the brushless motor based on the warranty card from the date when it is sold to the end user. Lifetime maintenance.



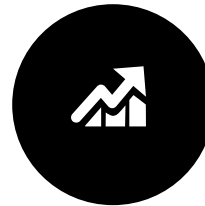
STEP1

We will offer the customer some FREE spare parts for repair use according to their accumulated order quantity 10pcs, including adapter, main board, motor driver board, button panel, suction hood, drip-proof ring.



STEP2

We're willing to provide after-sales training courses free of charge to customer's technicians according to their demand, including online technical support.



STEP3

We will send spare parts free of charge to customers and bear freight charge, if they give us feedback for product quality problem within warranty period.



STEP4

We're willing to design advertising materials or videos for customers. That will save cost and effort for them.

THANKS

BAOLAI

ESS1 extraoral suction system