



科技立身
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甲誉天下

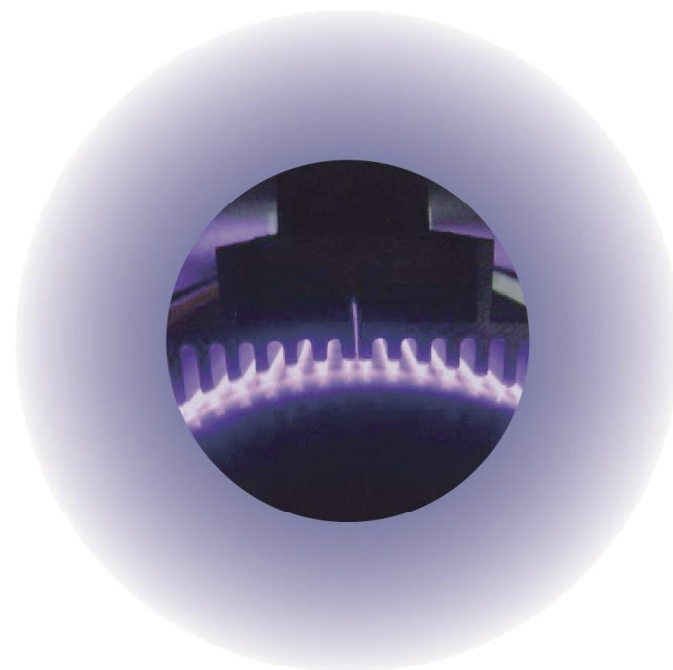
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电晕与等离子处理
Corona and plasma treatment



上海科甲电子有限公司
SHANGHAI CORONA TREATER CO.,LTD.



上海科甲电子有限公司自成立以来，有数十年的生产设计经验，公司秉承“科技立身，甲誉天下”的经营理念，生产的设备主要配套于涂布机、印刷机、复合机、中空板等生产线，设备性能优良，质量稳定，除了配套与国内知名企业外，已经出口北美、欧美、东南亚等数十个国家。

公司与时俱进，积极结合当前新技术，生产的触摸屏式电晕设备，具有数字集中化的特点，预留有多个人性化的数字接口，高压放电更精细化可控，电晕放电更充分。

公司业务不仅仅局限于塑料薄膜行业，积极开拓新的业务领域。公司生产的中空板电晕设备最厚处理12mm左右，达因数值可以达到60左右，由于电晕效果好，积极拉动了国内整个中空板出口量的增加。

公司具有良好的售后服务体系，客户可以24小时拨打我公司的免费服务热线，承诺接到客户故障电话后，江浙沪皖24小时内到达客户现场，其他地区48小时内到达客户现场。

Since its establishment, Shanghai Corona Treater Co., Ltd. has more than ten years experience in corona treater. The Company is committed to concept of "Based on Technology, Becoming the Number One". Shanghai Coronash mainly work along with coating machine, printing machine, compound machine, polypropylene sheet machine with excellent performance and stable quality, which is not only used by domestic wellknown enterprises but also have exported to North America, Europe, the USA, Southeast Asia and other countries.

Shanghai Coronash keeps pace with the times and actively applies the latest new technologies. The touch screen has the characteristic of digital centralization and reserves multiple personalized digital interfaces so that the high-voltage-discharge is more refined and controllable then result is sufficient.

Shanghai Coronash is not limited to plastic industry and also actively expands new business fields. Coronash treat polypropylene hollow sheet, maximum thickness about 12mm and dyne level reach about 60. Due to its good effect, it actively promotes the increase of export volume.

Shanghai Coronash has good after-sales-service system. Customers can call free service hotline any time and we arrive at the site of in Jiangsu, Zhejiang, Shanghai and Anhui within 24 hours and in other regions within 48 hours in China.

工作原理

Working principle

电晕设备主要包括：主机控制系统、变压器升压系统、电晕放电架系统。

其主要工作原理：通过工业电源的转换、升压，生成高频高压电源，在电极和辊筒之间产生电晕放电，由于介质是空气，会形成臭氧，当它们在和处理物表面发生作用时，会产生相关的自由基，增加材料的极性基因，从而增加材料表面的活性，在印刷、复合、涂胶等生产中得到理想的工艺效果。

Shanghai Coronash mainly includes: generator, transformer system, discharging rack system.

Coronash has high-frequency and high-voltage through conversion and boosting of industrial power supply. And coronash discharges between the electrode and the roller. As medium is air, so form ozone. When ozone interacts with surface of the treatment, they will produce related free radicals, And improve the polar gene, thereby increasing the activity of the surface. When printing, compounding and gluing, it will have good effect.

达因值效果对比图 / Dyne level /



Before treated

After treated

处理前与处理后的材料对比

电晕设备变压器及控制系统

Corona equipment transformer and control system

型号：CH

- 自动过温、过流、短路、气缸开启、滚筒停转报警保护功能。
- 速度功率智能匹配跟踪。
- 可选配湿度过高预加热功能。
- 安全高效油浸式高频高压变压器。
- 上海Coronash电晕设备已通过国际CE认证。

- ※ Automatic over temperature, over current, short circuit, cylinder open, drum stop alarm protection function.
- ※ Intelligent matching and tracking of speed and power.
- ※ Optional pre heating function with high humidity.
- ※ Safe and efficient oil immersed high frequency and high voltage transformer.
- ※ Corona equipment has passed the international CE certification.



型号 Model	CH1000	CH2000	CH3000
输入电压 Input voltage	220V±10%, 50Hz/60Hz	380V±10%, 50Hz/60Hz	380V±10%, 50Hz/60Hz
输出功率 Output power	1~3KW	4~15KW	15KW~30KW
最高输出电压 Maximum output voltage	7KV~12KV	8KV~15KV	8KV~15KV
输出频率 Output frequency	10~20KHz	10~25KHz	10~25KHz

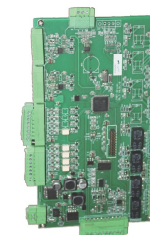
人机智能控制界面

Man machine intelligent control interface



- 超大触摸屏用户界面，预设材料工作数据。
- 参数存储设定，带有数据记忆保留，同时生产过程带监控数据储存。
- 可根据设备运行速度或模拟量调整功率。
- 多国语言选择模式。

- ※ Large touch screen user interface, preset material working data.
- ※ Parameter storage setting, with data memory retention, and production process with monitoring data storage.
- ※ The power can be adjusted according to the equipment running speed or analog quantity.
- ※ Multi language choice mode.



涂布复合吹膜设备专用放电系统

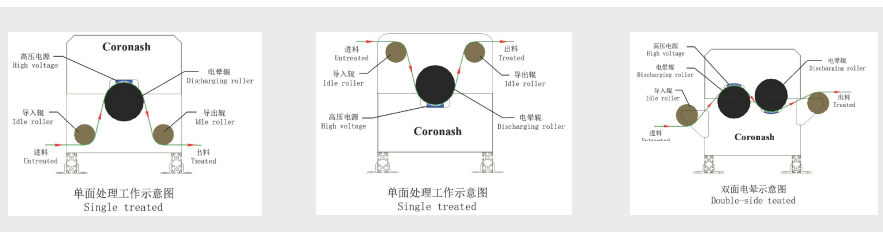
Special discharge system for coating compound blowing equipment

型号：CO

- 放电电极：铝电极/进口陶瓷电极。
- 处理应用：铝电极处理所有非导电卷材、纸张、复合卷材。陶瓷电极处理导电及非导电卷材、铝箔、电化铝各类塑料膜、纸张等。
- 适用机型：吹膜机、涂布机、流延机、复合机、印刷机等。

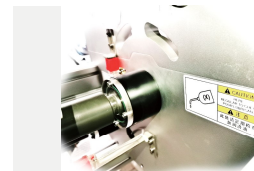
- ※ Discharge electrode: aluminum electrode / imported ceramic electrode.
- ※ Processing application: aluminum electrode is used to treat all non-conductive coil, paper and composite coil. Ceramic electrode treatment of conductive and non-conductive coil, aluminum foil, anodized aluminum All kinds of plastic film, paper, etc.
- ※ Applicable models: film blowing machine, coating machine, tape casting machine, laminating machine, printing machine, etc.

材料处理示意图 / Schematic diagram of material handling/



设计结构优势

/ Advantages of design structure /



电晕机辊采用镶入浸油式轴承座，转动精度高，运行顺畅，薄膜不易褶皱。轴承座端盖有机玻璃盖，可随时观察轴承油位并需定期加注润滑油。

The roller of corona machine is inlaid with oil immersed bearing seat, with high rotation accuracy, smooth operation and film wrinkle resistance. The organic glass covering on the end face of the bearing seat can observe the oil level of the bearing at any time and add lubricating oil regularly.



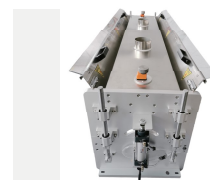
高压线连接端采用介电性能优异，绝缘强度高及抗电弧性能强的聚四氟防护。易维护，安全性高。

High voltage wire connection end adopts PTFE with excellent dielectric property, high insulation strength and strong arc resistance. Easy to maintain, high security.



带有数显的电极气隙校准调整，确保了宽幅上精确和一致的电晕处理效果。工作状态下也可调节气隙大小。

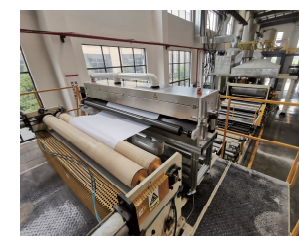
The adjustment of electrode air gap with digital display ensures accurate and consistent corona treatment effect in wide range. The size of air gap can also be adjusted under working condition.



放电电极与放电辊可通过控制气缸升降进行穿膜走料。两端两圆柱直线导轨，侧板带有定位槽，使电极升降平稳，位置精准。同时配备气缸开启及辊筒停转保护。

The discharge electrode and discharge roller can go through the membrane and transport the material by controlling the cylinder lifting. Two cylindrical linear guide rails at both ends, with positioning groove on the side plate, make the electrode rise and fall smoothly and the position is accurate. At the same time, it is equipped with cylinder opening and roller stopping protection.

部分安装实例展示 / Some installation examples /



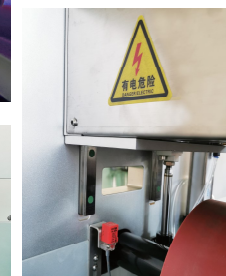
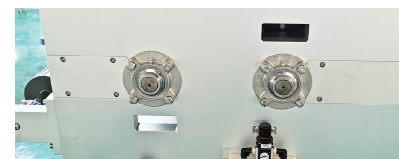
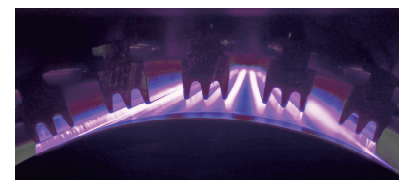
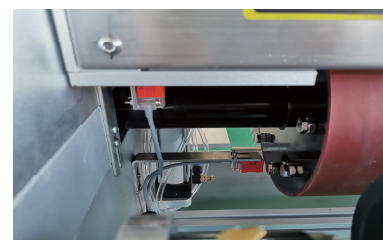
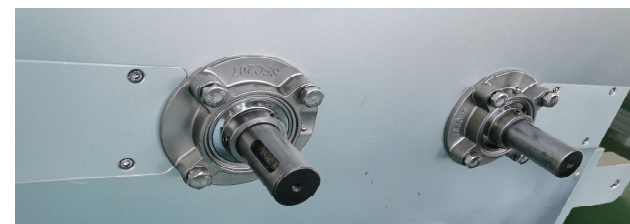
高速生产线专用放电系统

Special discharge system for high speed production line

型号：HCO



- 电极直线导轨升降，升降平稳，位置准确。同时使穿料放料更方便。
- 电极开启保护及辊筒停转保护，安全可靠。
- 可选配 EDPI 导电橡胶压轮，有效防止材料褶皱及划伤。
- 可视化放电窗口，可随时检查放电情况。
- 方便快捷的电极气隙校准调整，确保了宽幅上精确和一直的电晕处理效果。甚至可以在生产期间进行调整。
- 电晕处理设备可以预备延长轴，以用于直接或间接的电机驱动，使用薄型材料情况下。
- 电晕轮可选配水冷结构，用于怕受热材料，降低电晕过程中产生的温度。
- 侧板采用喷砂氧化铝板，外罩及轴承座采用 304 材质防护，耐臭氧腐蚀。



- ※ The linear guide rail of the electrode rises and falls stably, and the position is accurate. At the same time, it makes it more convenient to wear and discharge materials.
- ※ The electrode opening protection and roller stop running protection are safe and reliable.
- ※ Edpi conductive rubber pressure wheel is optional to prevent material wrinkle and scratch.
- ※ The visual discharge window can check the discharge condition at any time.
- ※ Convenient and quick adjustment of electrode air gap ensures accurate and continuous corona treatment effect in wide range.
- ※ It can even be adjusted during production.
- ※ Corona treatment equipment can be equipped with an extension shaft for direct or indirect motor drive, where thin material is used.
- ※ The corona wheel can be equipped with water-cooled structure, which is used to prevent heating materials and reduce the temperature generated during Corona process.
- ※ The side plate is sandblasted aluminum oxide plate, and the outer cover and bearing seat are made of 304 material, which is ozone resistant.

中空板电晕处理专用放电架系列

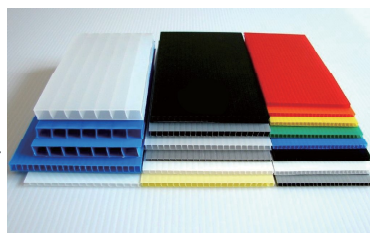
Special discharge rack series for hollow plate corona treatment

型号：HP



- 双面同时处理。
- 可在线调节处理板厚 2mm-12mm。
- 单面 2 组放电形式，放电充分。
- 内部电晕辊同步结构设计，避免电晕辊停转损坏。
- 处理后达因值可达 60。

- ※ Simultaneous Processing Of Both Sides.
- ※ The thickness of the plate can be adjusted on line from 2mm to 12mm.
- ※ Two groups of single side discharge form, full discharge.
- ※ Internal corona roller synchronous structure design, avoid electricity damage of halo roll.
- ※ After treatment, the dyne value can reach 60.



部分安装实例展示 / Some installation examples /



设计结构优势 Advantages of design structure /



根据被处理中空板的宽度，电极可灵活进行放电宽度调节，避免空电晕烧坏硅胶管。

According to the width of the treated hollow plate, the electrode can adjust the discharge width flexibly to avoid damaging the silicone tube by air corona.



可方便快捷调节不同板厚电晕，数值可视化，可处理 2-12mm 板
It can adjust corona of different thickness conveniently and quickly, and can process 2-12mm plate.



放电架标配带脚轮及马蹄固定脚，方便移动。
The discharge rack is equipped with caster and horseshoe fixed foot as standard, which is easy to move.



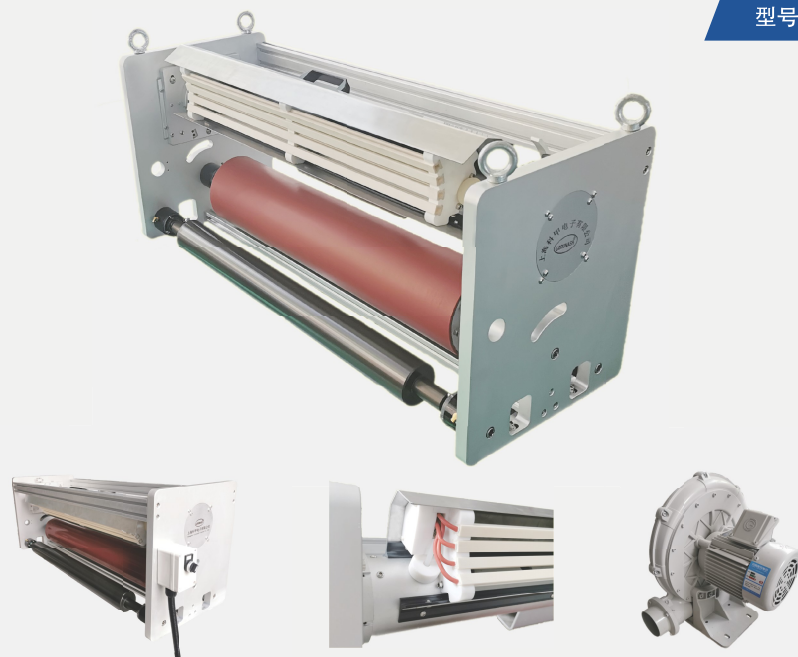
放电架带大行程气缸开启，方便穿料，同时配备气缸开启安全保护。

The discharge rack is equipped with a large stroke cylinder to open, which is convenient to wear materials. At the same time, it is equipped with cylinder opening safety protection.

旋转式电极放电系统

Rotary electrode discharge system

型号：RE



- 氧化铝板机身，不锈钢外壳防护设计，抗臭氧耐腐蚀。
- 高压线连接端采用抗电弧聚四氟板防护，安全性高。
- 电极采用德国进口齿装陶瓷电极，确保对薄膜、铝箔、铜箔、纸张等处理效果达到最佳。
- 上海Coronash放电架，所配辊筒均采用镶入式充油轴承座，运转顺畅，位置精度高。
- 电极可侧掀，易清洁维护及接料穿料。
- 旋转电极放电架设有辊筒停转及电极到位保护。

- ※ Aluminum oxide plate body, stainless steel shell protection design, ozone resistance and corrosion resistance.
- ※ The connection end of high voltage line is protected by arc resistant PTFE plate, which has high safety.
- ※ The tooth mounted ceramic electrode imported from Germany is used to ensure the best treatment effect of film, aluminum foil, copper foil and paper.
- ※ Shanghai coronash discharge rack is equipped with inserted oil filled bearing pedestal for smooth operation and high position accuracy.
- ※ The electrode can be tilted on the side, which is easy to clean, maintain, connect and wear materials.
- ※ The rotating electrode discharge rack is equipped with roller stop and electrode in place protection.

窄幅抽屉式电晕处理系统

Narrow drawer corona treatment system

型号：PR



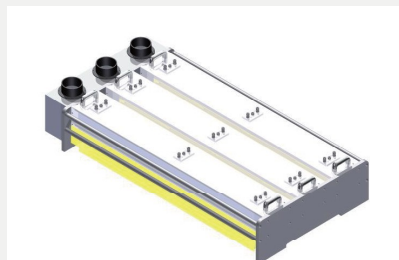
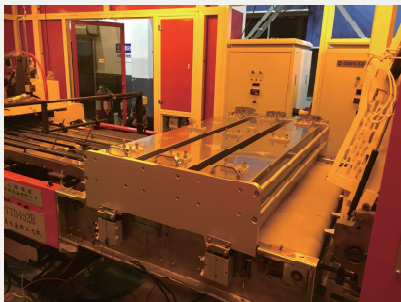
- 采用多组德国进口陶瓷电极，对薄膜、铝箔、金属膜和纸卷材有较好的处理效果。
- 窄幅抽屉式电晕处理系统采用不锈钢外罩及氧化铝板设计结构，抗氧化耐腐蚀。
- 电极采用抽屉滑轨安装形式，方便快捷拆装。易于快速清洁维护，同时便于穿料接料。
- 设备配备辊筒停转及电极到位保护。

- ※ Several groups of ceramic electrodes imported from Germany are used to treat the film, aluminum foil, metal film and paper coil.
- ※ The narrow drawer corona treatment system adopts stainless steel cover and aluminum oxide plate design structure, which is anti-oxidation and anti-corrosion.
- ※ The electrode is installed in the form of drawer slide, which is convenient for disassembly and assembly. It is easy to clean and maintain quickly, and it is convenient to wear and receive materials.
- ※ The equipment is equipped with roller stop and electrode in place protection.

金属导电类电晕系统

Metal conductive corona system

型号：ME



应用范围：

- 采用德国进口陶瓷电极，电极最长每根可达 4000mm。
- 可处理单张铝板材、铝箔、电化铝、铜箔等。
- 对金属表面有很好的去油污清洁并提高材料表面张力。

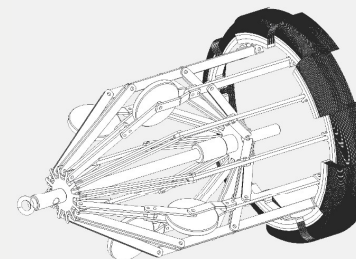
Application range:

- ※ The ceramic electrode imported from Germany is adopted, and the longest electrode length is 4000mm.
- ※ It can handle single sheet aluminum sheet, aluminum foil, electrochemical aluminum, copper foil, etc.
- ※ Good degreasing and cleaning of metal surface and improvement of material surface tension.

管道电晕处理系统

Corona treatment system of pipeline

型号：PL



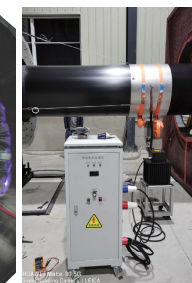
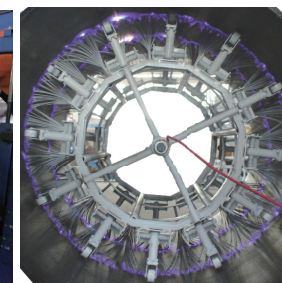
可变直径式内电极

Variable diameter inner electrode



固定直径式内电极

Fixed diameter inner electrode



- 处理塑胶类大口径管道，最厚 10mm 左右。
- 处理管材直径最大 2000mm 左右。
- 独特的不锈钢放电电极，根据不同规格管径，可变径放电电极到合适尺寸。

- ※ Treatment of large diameter plastic pipe, the thickest about 10 mm.
- ※ The maximum diameter of treated pipe is about 2000mm.
- ※ Unique stainless steel discharge electrode, according to different specifications of pipe diameter, discharge electrode diameter can be changed to the appropriate size.

实验室电晕处理平台

Hand held discharge platform

型号：HD



手动型测试平台
Manual test platform



自动型测试平台
Automatic test platform

- 安全性高，操作简单，可处理金属及非金属材料。
- 可处理 0~2.5mm 厚测试材料。
- 能够有效快速的检测处理后材料效果呈现。

※ High safety, simple operation, can handle metal and non-metallic materials.
 ※ It can handle 0 ~ 2.5mm thick test material.
 ※ It can effectively and quickly detect the material effect after treatment.

技术参数 / Technical parameter /

型号 Model	HD1000
电源电压 Input voltage	220(±10%) VAC, 50/60Hz
电源输入保险丝 Power input fuse	10A/250V
工作频率 Working frequency	18KHz~60KHz
输出高压 Output high voltage	1KV~3KV
最大输出功率 Output power	600W
最大功率消耗 Maximum power consumption	<700W
外形尺寸 Dimension (LxWxH)mm	780mmx460mmx150mm
输出线缆长度 Output cable length	净长度 ≥ 1200mm, 可定制
有效处理面积 Effective treatment area	300mmx350mm
重量 Weight (Kg)	15Kg

单张板材及片材电晕处理系列

Corona treatment series of sheet and sheet

型号：SH



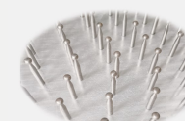
多种放电电极选择

Multiple discharge electrode selection



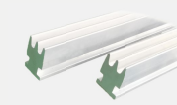
德国进口陶瓷电极

Ceramic electrode imported from Germany



不锈钢针型电极

Stainless steel needle electrode



专利型铝电极

Patented aluminum electrode

- 用于处理单张片材。
- 带有电机驱动，材料从一端自动输入，一端自动输出。
- 处理速度可调，多重安全保护装置。
- 可做两侧平台折叠型，减少占地，易于移动。

※ Used to process single sheet.

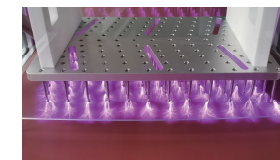
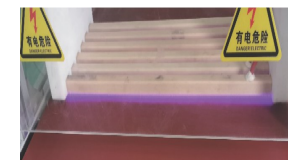
※ With motor drive, material from one end of the automatic input, one end of automatic output.

※ Adjustable processing speed and multiple safety protection devices.

※ It can be folded on both sides of the platform to reduce land occupation and easy to move



不同电极放电效果展示 / Display of discharge effect of different electrodes/



等离子表面处理机

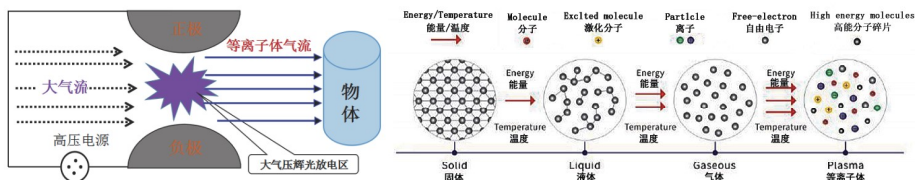
Plasma surface processor

等离子表面处理技术原理

电极两端施加交流高频电压，使两电极间的空气产生辉光放电而形成等离子区。电子在运动中不断与气体分子发生碰撞，产生了大量新的电子，当这些电子到达阳极时，引入了多种含氧基团，使表面由非极性、难沾性转为有一定极性、易沾性和亲水性，有利于沾结、涂覆和印刷。

Principle of plasma surface treatment technology

High frequency AC voltage is applied at both ends of the electrode, which makes the air between the two electrodes produce gas glow discharge and form plasma area. Electrons collide with gas molecules continuously in motion, and a large number of new electrons are produced. When these electrons reach the anode, a variety of oxygen-containing groups are introduced, which makes the surface from non-polar and difficult to stick to certain polarity, easy to stick and hydrophilic, which is conducive to bonding, coating and printing.

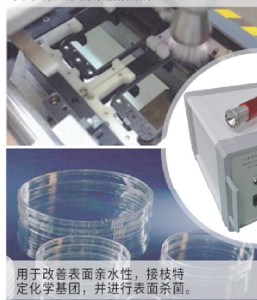


技术参数 / Technical parameters /

电源电压 Supply voltage	220V(±10%) VAC, 50/60Hz	工作压力范围 Working pressure range	0.05MPa~0.4MPa
电源输入保险丝 Power input fuse	10A/250V	气源要求 Air source requirements	≥0.4MPa, 无油无油 (No water and no oil)
工作频率 Working frequency	118KHz~60KHz	外形尺寸 (mm) Dimensions (mm)	80*80*325
输出高压 Output high voltage	2KV~7KV	输出线缆长度 Output cable length	净长度 >2500mm 可定制 (Customizable)
最大输出功率 Maximum output power	600W	加工处理宽度 Processing width	60mm
最大功率消耗 Maximum power consumption	<700W	重量 Weight	15Kg

活化塑料外壳表面，增强其印刷、涂覆等粘接效果

PTFE (铁氟龙) 孔壁表面改性活化，提升可靠性

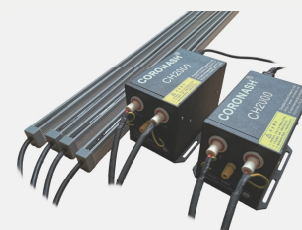


型号：PS

型号：SE

静电消除器

Electrostatic eliminator

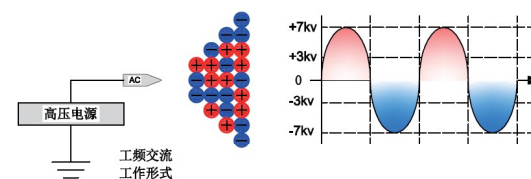


可以同时为两根静电消除棒提供7KV的高压，也可以为离子风枪，离子风蛇等发生设备的连接使用，安装便捷，连接简单，同时防止操作中的静电电击及静电火灾。已通过CE认证，单棒最长4米。

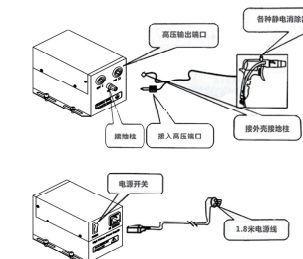
It can provide 7kv high voltage for two Static Eliminators at the same time, and can also be used for the connection of ion air gun, ion wind snake and other generating equipment. The installation is convenient and the connection is simple. At the same time, it can prevent electrostatic shock and electrostatic fire during operation. It has passed CE certification and the maximum length of single rod is 4 meters.

型号 Model	输入电压 Input voltage	输出电压 Output voltage	输出接口 Output interface	输出电流 Output current	输出功率 Output power	使用环境 Usage environment	有效距离 Effective distance
CH2000	220V±10% 50/60Hz	7KV	2	≤5mA	50W	湿度≤80%	≤100mm

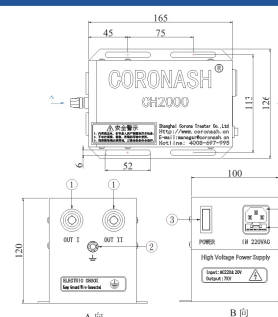
工作方式 / Way of working /



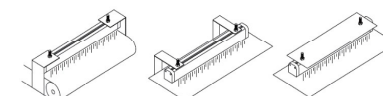
接线方式 / Wiring mode /



安装尺寸图 / Installation dimensions /



- ① 高压输出端
High voltage output
- ② 接地端
Grounding
- ③ 电源开关
Power switch
- ④ 电源输入端
Power input
- ⑤ 电源保险丝
Power fuse



静电驻极

Electrostatic electret

熔喷静电驻极工艺，熔喷布达标的重要因素之一熔喷静电驻极的工艺是事先在PP聚丙烯聚合物中加入电气石、二氧化硅、磷酸锆等无机材料，然后在卷布前通过静电发生器钼丝电极电压35-50KV一组或多组电晕放电的方式对熔喷材料带上电荷，施加高压时钼丝周围的空气产生电离，产生局部击穿放电，载流子通过电场的作用，而沉积到熔喷布表面，一部分载流子会深入表层被驻极母粒的陷阱捕获，从而使熔喷布成为驻极体过滤材料。经静电驻极处理的熔喷非织造布，因带有持久的静电，可依靠静电效应捕集微细尘埃，因此具有过滤效率高、过滤阻力低等优点。

Melt blown electrostatic electret process, One of the important factors for the melt blown fabric to meet the standard is to add tourmaline, silica, zirconium phosphate and other inorganic materials into PP polypropylene polymer in advance, and then charge the melt blown material by one or more groups of corona discharge with the electrode voltage of 35-50kv of electrostatic generator before rolling cloth. When high voltage is applied, the air around the molybdenum wire will be ionized and local area will be produced in the process of partial breakdown discharge, the carriers are deposited on the surface of melt blown fabric by the action of electric field. Some carriers will go deep into the surface layer and be trapped by the electret masterbatch, which makes the meltblown cloth become electret filter material. The melt blown nonwovens treated by electrostatic electret have the advantages of high filtration efficiency and low filtration resistance because they have persistent static electricity and can capture fine dust by electrostatic effect.



技术参数 / Technical parameters /

型号 Model	Coronash-60KV	Coronash-100KV
电源电压 Input voltage	220(±10%) VAC 50/60Hz	220(±10%) VAC 50/60Hz
电源输入保险丝 Power input fuse	10A/250V	10A/250V
输出电压 Output high voltage	60KV	100kv
最大输出功率 Output power	1200W	2000W
输出极性 Output polarity	正压 (可逆负压) Positive (optional negative)	正压 (可逆负压) Positive (optional negative)
放电丝数量 Number of discharge wires	4	4 (可逆8根)
处理宽度 Processing width	200mm-2500mm	900mm-5000mm

部分安装实例展示 Installation example/



水驻极

Water electret

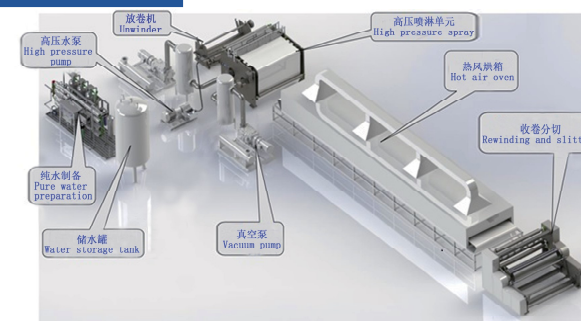
水驻极技术源于美国3M，水驻极是高效率，低阻力，通常15-25G布就能达到99%+的滤效，与传统熔喷布驻极工艺区别在于：传统熔喷布使用的是电晕驻极，其表面驻极体较明显，但是过滤效率达不到峰值及储存会随着时间降低，材料表面静电衰减明显，其静电保持是电晕驻极的三倍以上，最关键的是高温高湿老化测试后，滤效几乎没有下降。

水驻极熔喷布是通过高压水泵将制备过的纯水高压输送到水刺装置，由扇形喷嘴对熔喷布进行喷射，二者摩擦从而产生静电；水驻极熔喷布表现情况为静电量饱和，水驻极充电方式可过油性、盐性检测，可以有效解决口罩行业熔喷布电驻极过滤效率提升及储存后降低的问题。

The water electret technology originated from 3m in the United States. The water electret has high efficiency and low resistance. Generally, 99% filtration efficiency can be achieved with 15-25g cloth. The difference with traditional melt blown fabric electret lies in that: the traditional melt blown cloth uses corona electret, and its surface electret is obvious, but the filtration efficiency can not reach the peak value and the storage will decrease with time. The static electricity on the surface of the material will decay obviously, and its static electricity will remain electric. The most important factor is that the filtration efficiency has hardly decreased after high temperature and humidity aging test.

The water electret melt blown cloth is to deliver the prepared pure water to the spunlace device through the high-pressure water pump, and the fan-shaped nozzle sprays the melt blown cloth, and the friction between the two results in static electricity generation; the performance of the water electret melt blown cloth is saturated with static electricity, and the water electret charging method can detect the oil and salt, which can effectively solve the improvement of electret filtration efficiency of melt blown cloth in the mask industry and the issue of post-storage degradation.

设备总成 Equipment assembly/



部分安装实例展示 Installation example/



配件类

Accessories



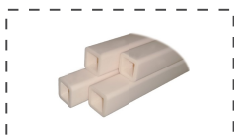
达因笔
Dyne pen



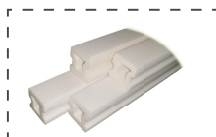
Φ6、Φ8、Φ12高压
High voltage wire



Φ30~Φ250MM
电晕专用硅胶管
Silicone sleeves



德国进口
正方形陶瓷电极
Square type 10x10
German ceramic electrode



德国进口
卡槽式陶瓷电极
German ceramic electrode



德国进口长方形陶瓷电极
Rectangular type 12x16
German ceramic electrode



陶瓷辊
Ceramic roller



电晕专用包胶辊
Encapsulated roller



不锈钢辊
Stainless steel roller



专利型铝电极
Patented aluminum electrode

合作品牌

Cooperative brand

