

## BFN-702+NET 悬挂式离子风机使用说明书

BFN-702+NET 悬挂式离子风机，出众的消除静电性能，是电子生产线，包装台、维修站及风淋设备等静电防护区域防止静电污染及破坏的理想设备。BFN702<sup>+</sup>NET overhead DC Ionizing Blower has outstanding Ion-eliminating performance, it is your ideal device to prevent static pollution and damage in the ESD area for electronic production line and maintenance.

### 注意: Note

安装使用前请仔细阅读本手册，所有 BFN 系列的静电消除设备不可在易燃易爆环境下使用，禁止使用普通的临时插座作为电源，所有 BFN 系列的离子风机必须使用配备安全标准电源连接线上的电源插座，不可更改或使用在不可靠接地的电源插座上。Please read the user guide carefully before operation . All BFN static eliminate series cannot be used under flammable and explosive environments. Don't use temporary common socket as power , all BFN Ionizing blower series must be used with the power socket which has standard power cable , do not use the socket which not grounding .

### 安全: Safety

BFN-702+NET 离子风机具有可靠的安全回路设计及良好的安全接地配置，同时风机在前后可装卸的面罩位置装有微动开关，可以在前后面罩意外脱落时及时断开供电电源，避免发生安全事故。BFN 702<sup>+</sup>NET has reliable and safe circuit design , excellent grounding distribution, in the meantime , it installed a micro-switch at the position of detachable covers to prevent accident by cut off power automatically when the covers fall off suddenly .

在易燃易爆环境下不可操作离子风机 Do not operate the blower in flammable and explosive environment

前后面罩的出风口不允许插入异物 Do not insert object into the air outlet

操作设备前必须可靠接地 Make sure it grounded well before using

在保洁、保养时必须先断开电源。使用酒精或其它制剂擦拭（包括金属外壳）之后，必须等待其完全干燥之后才允许离子风机通电正常工作。Make sure power is cut off before cleaning and maintenance. Make sure BFN702+NET is completely dry ((include the metal crust )before using which after cleaned by Alcohol or other preparations  
不得擅自拆装、修理。Do not disassemble or repair the blower by yourself

### 产品特点: Features

具有自动报警功能: Auto-alarm Function

当面向出风口，靠右边风机平衡电压为正或负且偏出设置报警电压时，蜂鸣器间断发出 1 声报警声； when the right blower balance voltage is positive or negative and out the set range, the buzzer alarm like "Z~~~Z~~~Z".

当面向出风口，靠左边风机平衡电压为正或负且偏出设置报警电压时，蜂鸣器间断发出 2 声报警声 when the left blower balance voltage is positive or negative and out the set range ,the buzzer alarm like "ZZ~~~ZZ~~~ZZ"

正常时，蜂鸣器不报警 when the balance voltage is under standard, the buzzer don't alarm .

外观时尚新颖 Fashionable design

人性化设计，超薄轻便，方便实用 Thin, light ,convenient and practical

离子输出量大，消除静电迅速 With large Ion output , can eliminate static quickly

- ◆ 风速调节灵活（风速无级调速） Air speed Adjustable (you can choose any air speed you like)
- ◆ 维护简单，可拆除的前后面罩，保洁方便 Detachable covers make maintenance and clean easy and convenient .

严密的安全保护装置 With stick security protection

适用范围广泛 Widely application range

### 应用范围：Application

专门为流水线、维修站、测试站及风淋设备等区域设计，适用各种需要静电防护各种场合。 Designed specially for maintenance bench, testing bench ,etc ,suitable for every situation.

### 规格：Specification

供电电源： AC220V（±15%）/50Hz 或 AC110V（±15%）/60HZ

Power Supply : AC220V(±15%)/50Hz or AC 110V(±15%)/60Hz

工作电流： 0.18A（风扇最大风速时）

Working Current: 0.18A( at the max fan speed)

风量： 160CFM（单个出风口风量） Each Blower Air Output: 160CFM

作用范围： 300~1200mm

Effective distance : 300~1200mm

离子平衡： ≤±5V

Ion Balance: ≤±5V

静电消除时间： ≤2.0S(±1000V 降至±100V，距出风口 300mm 处)

Decay time : ≤2.0S (from ±1000V to ±100V, 300mm away from the air outlet )

测试条件： 25℃，湿度 55% ;满足 EOS/ESD 标准。

Test Condition: Temp 25℃， Humidity 55% RH: compliant to EOS/ESD

工作环境： 温度 0℃~50℃，相对湿度 20%~85%RH

Working Condition: Temp 0℃~50℃, Humidity 20%~85%RH

颜色： 灰白色+天蓝色（塑胶）

Color: off-white + blue (plastic)

外型尺寸: W955mmxH85mmxD180mm

Size: W955mm × H85mm × D180mm

材质: 铝板 Material : Aluminum Plates

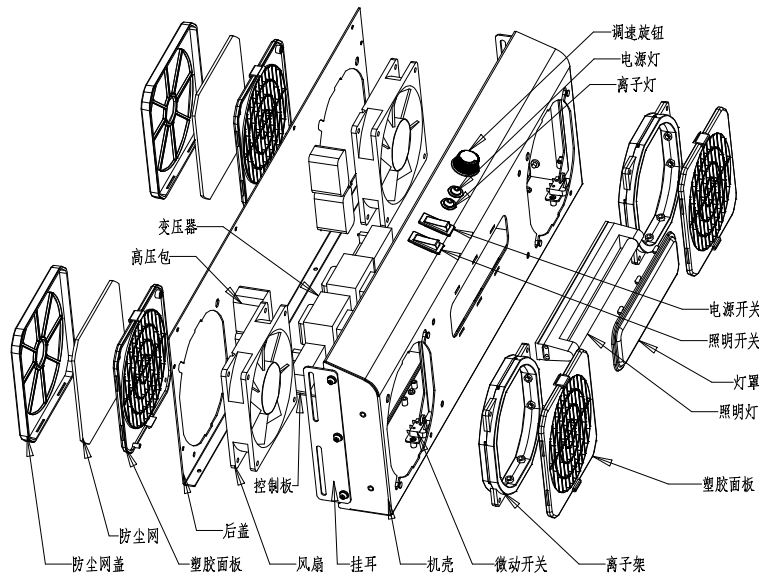
重量: 4.0kg

Weight: 4.0kg

### 装箱清单: Packing list

BFN-702+NET 离子风机 702+NET Ionizing blower	一台 1set
BFN 电源线 BFN POWR CORD	一条 1pcs
使用手册 (本手册) User guide	一份 1copy
出厂检验报告 Inspection report	一份 1copy
保修卡 Warranty Card	一张 1copy

### 结构: Structure



BFN-702+NET 结构示意图 1 BFN-702+NET structure picture

### 安装及使用范围: Installation and application

风机可使用 M6 螺栓把支架固定在适当的平面上或使用吊链吊在适当的平面上, 并置于 300mm~1200mm 有效工作距离, 使风束覆盖需要保护的区域, 风扇应吹向操作人员的手及需要防护的范围, 而不是身体。Put BFN 702+NET on the table or fix the bracket by M6 bolts on proper plane, make sure of the effective distance is between 300mm~1200mm, make sure air covers all protection area by adjust the angles .The air should blow to the hands and other protection area but not to human body.

消除静电时间的长短与离子风束的强弱有着直接的关系，在风速相同的情况下，距离出风口越远，风束越弱，消除静电的时间会相对长一些。建议在 300~1000mm 距离上使用 BFN-702+NET 效果最佳。Decay static time is related to the strength of air , at the same speed , farther from the air outlet , weaker the air , and longer the decay time . We strongly advise user keep BFN 702+NET at the distance between 300mm to 1000mm, as at this distance, it will get best eliminate effect.

### 操作指引：Operation Guide

1、开机前，BFN-702+NET 地址编号设置。Before using, please set the address number first 离子风机安装固定好后，检查电源线，将电源开关置到“ON”位置，此时离子指示灯（IONIZER）亮起。离子风机的风扇调速方式为全压启动，起点为最大风量，可根据实际需要调节风速。Install and fix BFN 702+NET well , check the power cable and turn on the power switch to “on”, the Ionizing light is green ; At the beginning ,the air speed is maximal because of full-pressure start. User can adjust the speed according to the practical situation

注意：前后面罩的出风口不允许插入异物，操作前必须可靠接地。Attention: Do not insert objects in to air outlet ,and make sure BFN702+NET is grounded well before using.

由于 BFN-702+NET 具有网络通讯功能，因此每一台 BFN-702+NET 连网前都要设置唯一的地址编号，即连接网络的所有设备的地址编号都不能冲突。设置方法如图2所示，6位拨码开关单元地址定义：拨码开关左边为二进制数高位，右边为二进制数低位，上拨为0，下拨为1，6位二进制编码，共可定义64个地址编号(0~63)。如图2所示二进制地址码为“000100”，查询表格一可得出地址编号为 “P04”。Each BFN-702+NET need to be set one unique address cord before connected , the address cord cannot repeat . Setting way showed in Picture 2, 6 bits address unit definition is : Dip switch on left side is high address, right is low ,up means” 0”,down means”1”,6 bits binary cord can definite 64 address (0-63), like picture 2, the binary cord showed is “000100”,according to the below matched graph, the address cord is “P04”



图 2

Binary address cord(二进制地址码) , high (高位) , low (低位)

表格一 sheet 1

二进制地址码	十进制地址编号	二进制地址码	十进制地址编号	二进制地址码	十进制地址编号	二进制地址码	十进制地址编号	二进制地址码	十进制地址编号	二进制地址码	十进制地址编号
000000	P01	000001	P02	000010	P03	000011	P04	000100	P05	000101	P06
000110	P07	000111	P08	001000	P09	001001	P10	001010	P11	001011	P12
001100	P13	001101	P14	001110	P15	001111	P16	010000	P17	010001	P18
010010	P19	010011	P20	010100	P21	010101	P22	010110	P23	010111	P24
011000	P25	011001	P26	011010	P27	011011	P28	011100	P29	011101	P30
011110	P31	011111	P32	100000	P33	100001	P34	100010	P35	100011	P36
100100	P37	100101	P38	100110	P39	100111	P40	101000	P41	101001	P42
101010	P43	101011	P44	101100	P45	101101	P46	101110	P47	101111	P48
110000	P49	110001	P50	110010	P51	110011	P52	110100	P53	110101	P54
110110	P55	110111	P56	111000	P57	111001	P58	111010	P59	111011	P60
111100	P61	111101	P62	111110	P63	111111	P64				

2、系统构成System Compose

2.1、 如图 3 所示： Please refer to following picture

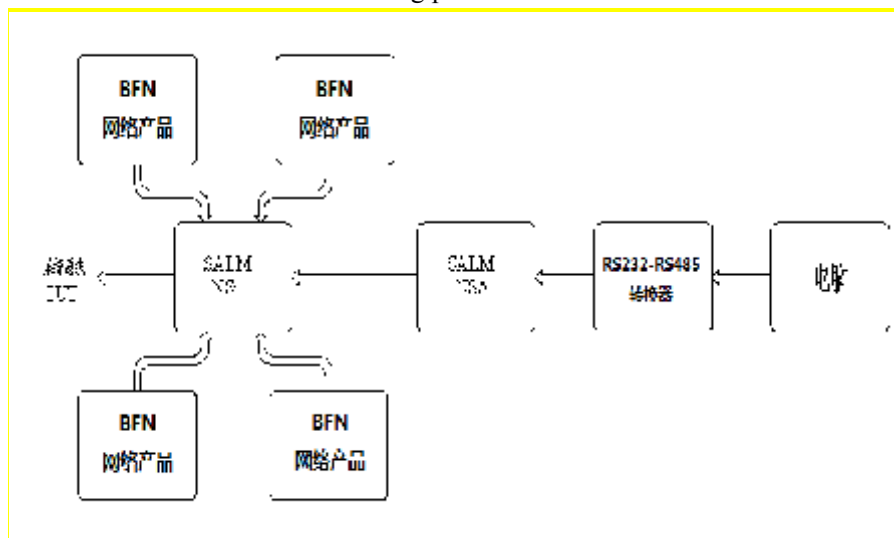
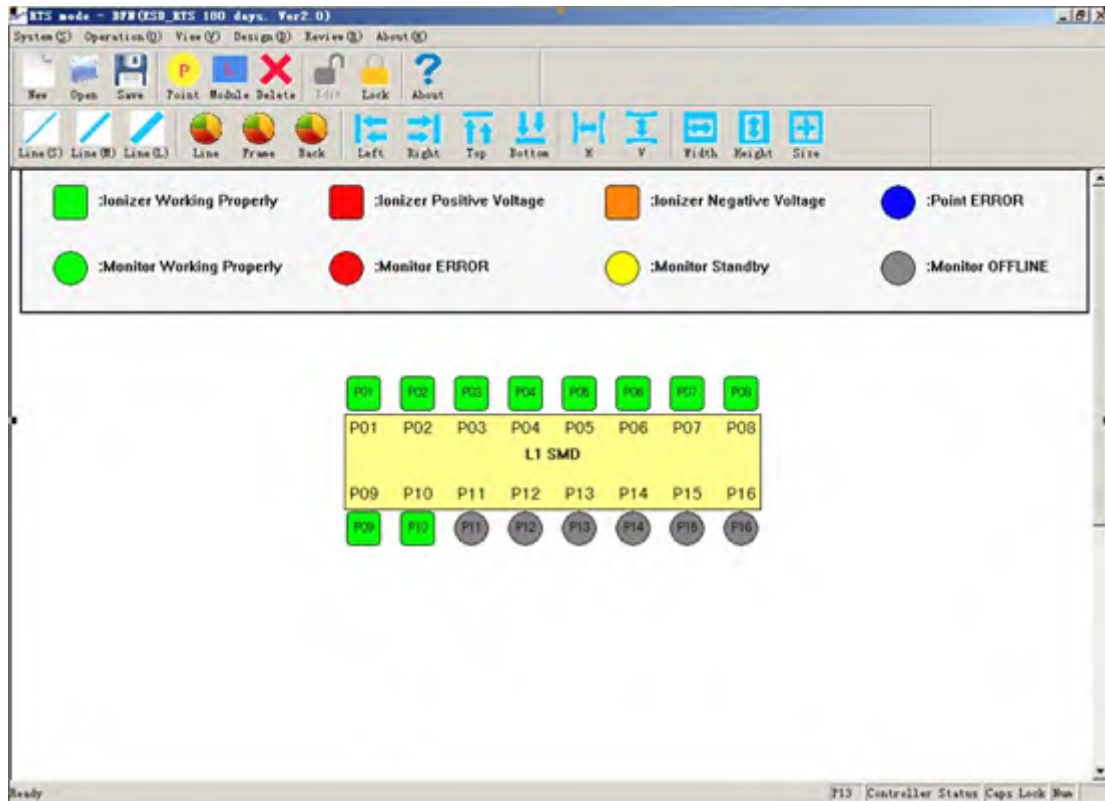


图3

2.2、连接系统后的界面简介（详见 ESD.RTS 软件说明） Connected System window

( please read ESD.RTS software instruction for details )



### 3、日常保养 Regular maintenance

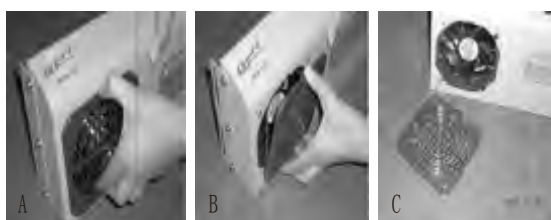
通过定期的保洁及校正以确保离子风机的正常工作。Cleaning and calibration periodically to make sure BFN702+NET can work normally

#### (1) 保洁 Cleaning

BFN 系列离子风机本身不释放灰尘，完全适用于各种要求的净化环境。有时周围环境内的微粒、灰尘会污染风机本身。为确保离子风机的正常使用需要经常进行保洁工作。BFN blower series don't release dusts themselves, they can completely measure up the different requirements of clean environment. But it is necessary to clean blowers to ensure then can work normally due to the particles and dust floating around, which may pollute the blowers

BFN-702+NET 离子风机独特的结构设计极大地方便用户对离子风机内部器件的保洁工作，具体操作见以下图例： The unique design of BFN 702+NET make cleaning easy and convenient for the inner parts ,please see as following picture:

1.Take off the front cover

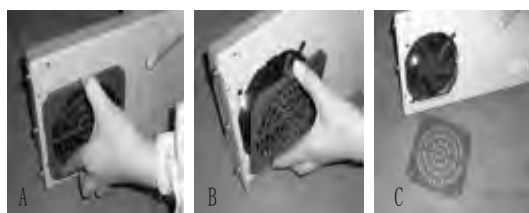


A 将塑胶前面罩上部的卡扣向下按住，使卡扣与金属外壳脱离。Press the button on the top front cover downwards and make the button separate from the metal crust

B 轻轻将塑胶前面罩向上斜拉，使其卡槽全部脱离金属外壳。注意，塑胶面罩与金属机身之间有定位销及孔位配合，拉出时要小心。Pull the front cover upwards lightly, make it separate from the metal crust completely. Attention: there are orientating forelock and corresponding apertures between front cover and metal blower body, please be careful when pulling out the front cover

C 然后使其全部脱离金属外壳。注意，塑胶面罩内部的金属感应网与机身内部有软线连接，不要拉断！Make the front cover completely separate from BFN 702+NET. Attention: there is a flexible cord which connect the metal induction netting of front cover with inner BFN702+NE , please do not break it

完成前面罩的拆除后，进行塑胶后面罩的拆除，具体操作见以下图例：Take off the back cover :



A 将塑胶后面罩上部的卡扣向下按住，使卡扣与金属外壳脱离。Press the button on the top back cover downwards and make the button separate from the metal crust

B 轻轻将塑胶后面罩向上斜拉，使其卡槽全部脱离金属外壳。注意，塑胶面罩与金属机身之间有定位销及孔位配合，拉出时要小心Pull the back cover upwards lightly , make it separate from the metal crust completely . Attention: there are orientating forelock and corresponding apertures between back cover and metal blower body, please be careful when pulling out the back cover

C 然后使其全部脱离金属外壳。Make the back cover completely separate from BFN702+NET.

这样 BFN-702+NET 内部的风扇及离子针架完全暴露出来，此时可以使用软毛刷或压缩空气进行除尘清洁，也可使用棉球沾 35%的工业酒精进行擦拭。建议每周进行一次，也可根据风机内部受污染的实际情况进行。Now you can use soft brush and compressed air to clean, or use tampons with 35% industrial alcohol. You can clean once a year, or clean according to the practical situation .

注意：在保洁、保养时必须断开电源。使用酒精或其他制剂擦拭（包括金属外壳）之后，必须等待其完全干燥之后才允许离子风机通电工作，否则会引起人身安全及损坏离子风机。在拆卸过程中要小心轻柔，避免损坏。Attention: Make sure power is cut off before cleaning and maintenance. Make sure BFN702+NET is completely dry before using which after cleaned by

Alcohol or other preparations to avoid any damage to user and BFN702+NET. Also, please be careful when disassembling .

BFN-702+NET 离子风机，独特的插拔离子针设计方式，使离子针的更换非常方便，具体操作见以下图例：It's quite easy to replace Ion needle of BFN 7 blower series, due to the unique insert-extract Ion needle design, please see as following :



A 按照前罩的拆卸方式将面罩完全取下，并轻轻的放置在机体侧面。Take off the front cover

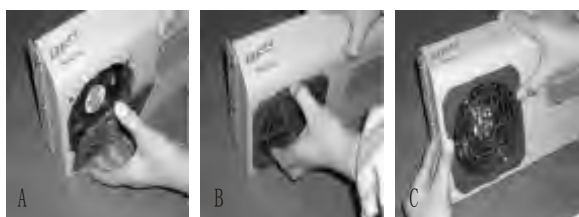
注意：感应线不要受到损伤。Attention: Do not damage the induction cable

B 使用尖嘴钳夹住离子针，并使用适当的力将其拔出。另取一支新的离子针再将其插入到相应的离子针孔位。Extract the Ion needle by sharp-tip tweezers, and insert a new one.

注意：一定要将针插到底部，并与其它针的长度相一致及不要刺伤到人的手部。Attention: make sure the Ion needle reach the bottom of the hole. Be careful and do not hurt your hand.

C 取起前面罩，并将感应线归放正确，再按照前面罩的正确安装方式，将其固定牢固。Install the front cover according to the process as following

前、后塑胶面罩的安装也是比较便捷的，具体操作见以下图例：Please see as following to install the front cover after cleaning,



A 首先将塑胶面罩下部卡槽卡入金属外壳内。Insert the button on the bottom of the front cover into metal crust.

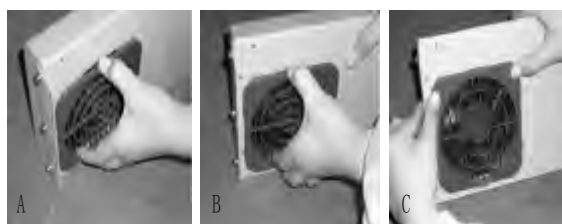
注意，塑胶面罩与金属机身之间有定位硝及孔位配合，卡入时要小心对正。Attention: there are orientating forelock and corresponding apertures between the front cover and metal blower, please be careful when pushing the cover

B 将塑胶前面罩上部的卡扣向下按住，推入金属外壳内，使卡扣与金属外壳完全卡入。Push the button on the top of the front cover downwards into metal crust.

C 将面罩四周不严密的地方按与金属外壳按平，使整个面罩完全卡入金属外壳中。Push the front cover into the metal crust completely.



完成前面罩的安装后，进行塑料后面罩的安装，具体操作见以下图例： Please see following pictures to install the back cover .



A 首先将塑胶面罩下部卡槽卡入金属外壳内。注意，塑胶面罩与金属机身之间有定位销及孔位配合，卡入时要小心对正。 Insert the button on the bottom of back cover into the metal crust. Attention: There are orientating forelock and corresponding aperture between the back cover and metal blower , please be careful when pushing the back cover

B 将塑胶前面罩上部的卡扣向下按住，推入金属外壳内，把使卡扣与金属外壳完全卡入。 Push the button on the top of the back cover downward into the metal crust

C 将面罩四周不严密的地方按与金属外壳按平，使整个面罩完全卡入金属外壳中 Push the back cover into the metal crust completely .

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注意：在安装过程中要小心轻柔，避免损坏。同时，前后面罩有用于安全保护回路的压块，来压住微动开关，同时存在一些定位销、孔及感应连线。在安装过程中，一定要使其完全压住微动开关，同时对正销、孔。否则，安装后，设备不会正常工作。 Attention: To avoid damage, please be careful when install the covers . Also , there are pressed blocks protecting safety loop under the covers to pin jiggle switch, some orientating forelocks , aperture and induction connection wire , make sure the pressed block pin jiggle switch right into forelock and aperture, otherwise, BFN702+NET won't work normally 。

### (3) 校正 Calibration

BFN-702+NET 离子风机性能是稳定可靠的，由于可能受电压波动、环境温湿度的变化会影响到离子风机的参数的变化。 BFN702+NET has stable performance, but the parameters may change according to the affection of Voltage, operating temperature and Humidity.

离子平衡度及静电消除时间的日常测试，可以用便携式离子设备测试仪，在工作岗位上测试，建议每天至少要进行一次。 Users can test Ion balance and static decay time by portable Ionizer testing device at working place At least once a day is requested.

离子平衡度及静电消除时间校正，请使用平板式静电分析仪，在实验室内进行。建议每年至少进行一次。 User can calibrate Ion balance and static decay time by Flat-plate Electro Static Analysis Device in laboratory. At least once a year is requested