

Electrostatic Purifier Product Manual

Shenzhen Shuangni Environmental Technology Co., Ltd.

(Read the instructions carefully before use and kRetain this document after reading..)

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Special-Precautions

Please read the instructions (Precautions) carefully before using this product and use it correctly.



1. Do not disassemble or repair the device without authorization, as this may cause electric shock or malfunction, seriously endangering your personal safety.
2. Only the rated voltage specified by this machine is allowed, and only a delta plug power supply with grounding is permitted.
3. Before removing the electrostatic field, unplug the power supply to avoid injury or electric shock.
4. Do not touch the inside of the machine directly with your hands, as this may cause serious injury.
5. Do not insert foreign objects or metal items into the machine, as this may cause product malfunction or pose a risk to your personal safety.
6. Do not splash or wash the power components of this product with water, as it may cause mechanical damage or electric shock.
7. Regularly maintain the machine's interior and clean the electrostatic field. Prolonged neglect of the electrostatic field cleaning may lead to fire hazards.
8. The power plug/power cord must not be damaged, intentionally bent, forcibly pulled, or squeezed. Continued use of a damaged power cord may cause electric shock and fire. If damaged, it must be replaced by the manufacturer and its authorized repair personnel.
9. Ensure the power plug is fully inserted into the socket. Incomplete insertion may cause electric shock, overheating, or even fire. Do not use damaged plugs or loose sockets.
10. The product shall be stored in a dry place, with attention to moisture-proof, lightning-proof, rainproof, and frost/snowproof protection.
11. Take precautions against fire and keep away from other hazardous materials such as flammable and explosive materials.
12. Avoid strong impacts, collisions, or vibrations to the product, and prevent internal wiring from falling, which could cause safety hazards.
13. Do not unplug or insert the plug with wet hands, touch wires, switches, or metal casings.
14. When using the product with other high-power appliances, the total power consumption must not exceed the rated capacity of the power outlet, electricity meter, fuse, and wiring.

If any abnormality is detected in the product, immediately disconnect the power supply and contact the manufacturer's technician for debugging and safety confirmation before reusing it.



Touching the blades is prohibited



Do not disassemble by yourself



Do not wash with water



The power cord must not be damaged.



Do not press heavy objects against the cord.

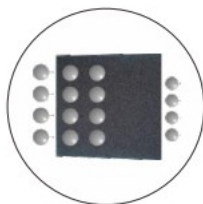
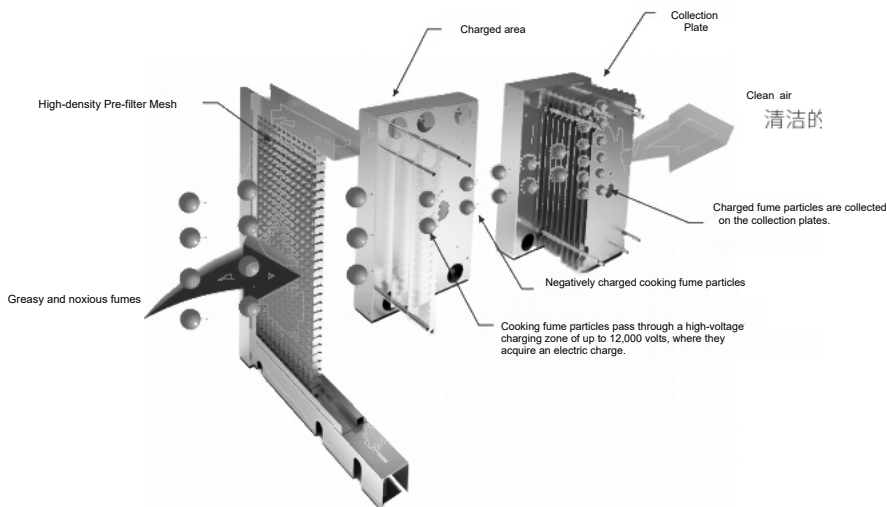


The plug must be fully inserted.

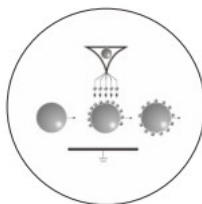
Electrostatic Purifier - Working Principle

Principle of ESP Cell

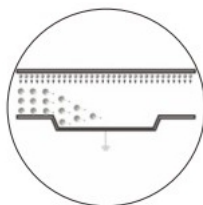
Scientific structural design, high-precision production process, and improved oil fume purification efficiency



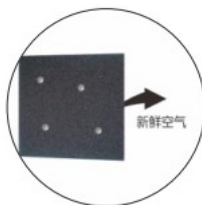
Step 1: Filter
High-density oil separator screens out the thicker oil fumes, leaving behind only the smaller oil particles and soot.



Step 2: Charged area
The oil fume particles are charged by the high voltage electric charge area up to 12 kV.

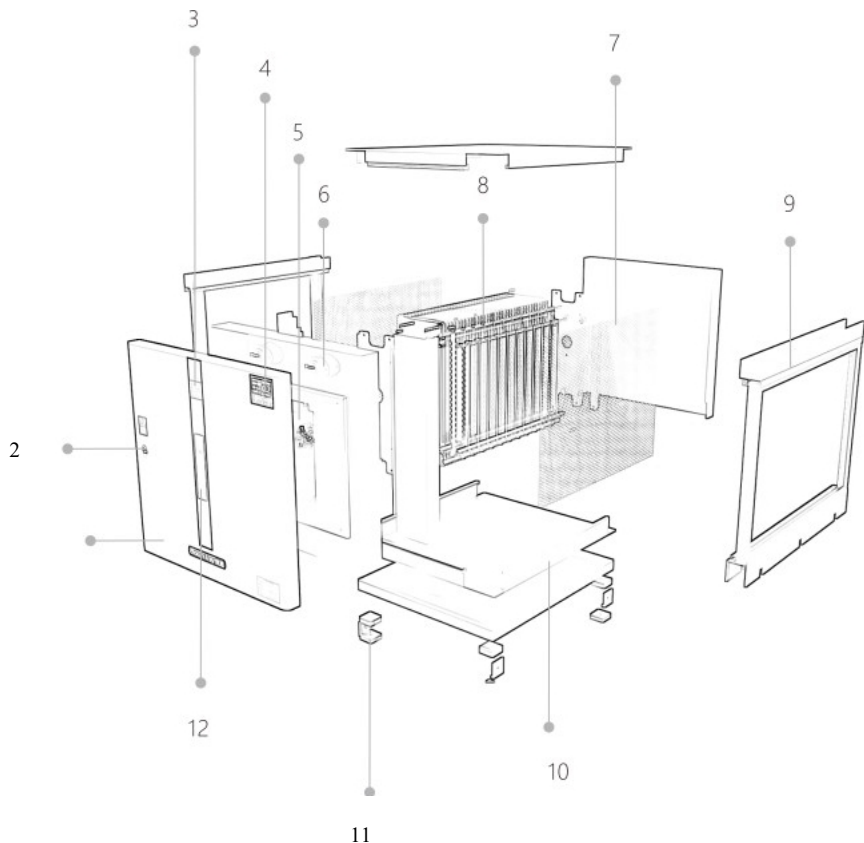


Step 3: Adsorption
The charged oil fume particles enter the low-pressure adsorption zone, and are adsorbed on the attachment plate by the principle of like repelling and unlike attracting.



Step 4: The purified cooking fumes will undergo a second filtration process.
Fresh air is discharged through a higher-density filter, achieving a purification efficiency of over 98%.

Structure Exploded View of ESP Purifier

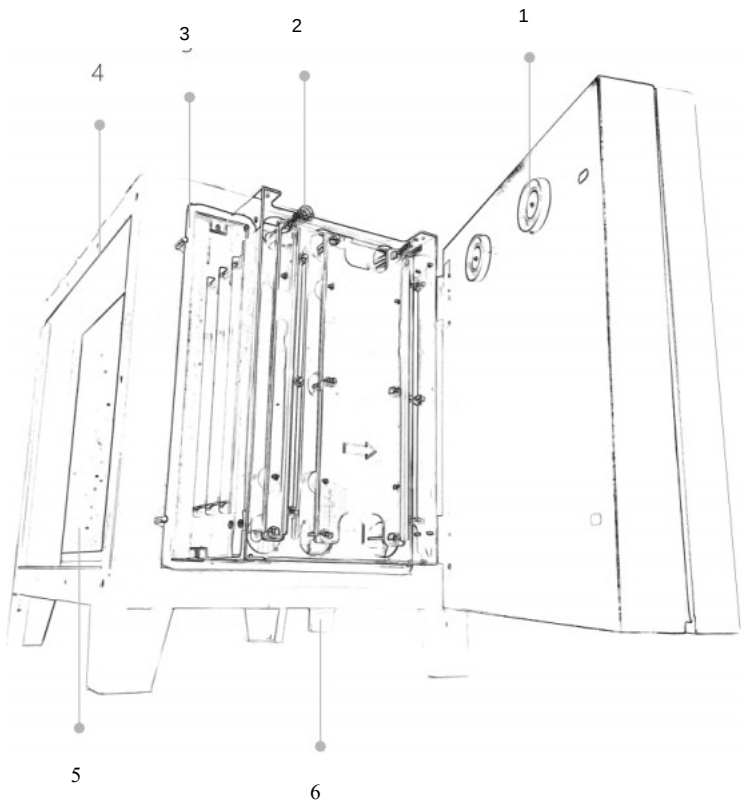


1: Electrostatic Spraying Process 2: Door valve safety lock 3: Intelligent LED display screen 4: Online cooking fume monitoring display (optional)

5: Digital power supply 6: High-voltage insulator 7: Rear cover of the chassis 8: High-voltage ESP Cells

9: Flange interface 10: Dirt Collection Tray 11: Convenient machine feet 12: Automatic cooking fume pollution alert

ESP Purifier - Internal Description



1: High-voltage insulator

2: Spring

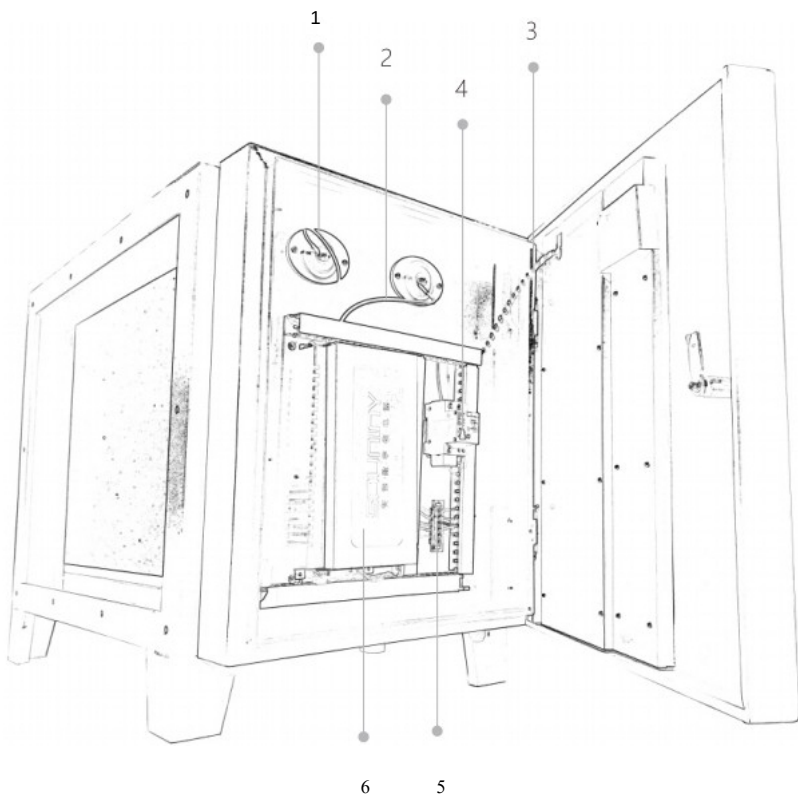
3: Sealing strip

4: Flange interface

5: Filter

6: Discharge outlet

ESP Purifier - Power Supply Instructions



1: Black high-voltage wire Terminal post

2: White low-voltage Terminal post

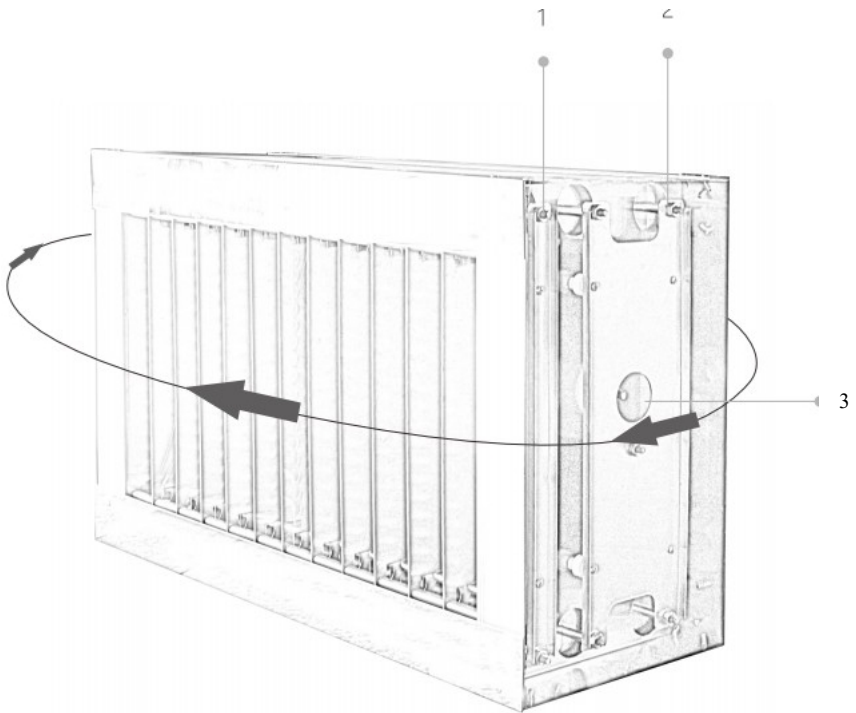
3: Power Cable Terminal

4: Circuit Breaker

5: Power Terminal Block

6: Equipment power supply

Electrostatic Cells of ESP Purifier



- 1.High-voltage Zone Conductive Plate Power Contact
2. Low-voltage Zone Conductive Plate Power Contact
3. Handling Lifting Ring

Sky Series-Product Specifications

The oil fume purification efficiency is up to 98% when the equipment is properly matched with the rated air volume.

Product model	Treated air vol- ume	Outline dimension	Flange size	Aggregate capacity	Weight of equipment
	(m ³ /h)	L*W*H (mm)	W*H (mm)	(W)	(KG)
KL-D-K40	4000	565*850*690	610*490	200W	70kg
KL-D-K60	6000	900*670*690	420*490	200W	80kg
KL-D-K80	8000	900*850*690	610*490	200W	110kg
KL-D-K100	10000	900*1000*690	760*490	400W	130kg
KL-D-K120	12000	900*1170*690	925*490	400W	150kg
KL-D-K160 single layer	16000	900*1570*690	1325*490	400W	175kg
KL-D-K160 double-layer	16000	900*850*1270	610*1070	400W	175kg
KL-D-K200	20000	900*1000*1270	760*1070	800W	225kg
KL-D-K240	24000	900*1170*1270	925*1070	800W	265kg
KL-D-K320	32000	900*1570*1270	1325*1070	800W	335kg
KL-D-K400	40000	1800*1000*1270	760*1070	1600W	450kg
KL-D-K480 double-layer	48000	1800*1170*1270	925*1070	1600W	530kg
KL-D-K480 three-layer	48000	900*1570*1870	1325*1670	1200W	520kg
KL-D-K640	64000	1800*1570*1270	1325*1070	1600W	670kg

Note: 1. The images and data above represent standard air volume specifications for reference only. No prior notice will be given for any changes.
2. Custom sizes with different air volumes are available upon request. For larger air volume requirements, please contact our technical team.

Clean Sky Series-Product Specifications

The oil fume purification efficiency is up to 95% when the equipment is properly matched with the rated air volume.

Product model	Treated air vo- lume	Outlinedimension	Inletandoutletports	Aggregate capacity	Number of mo- vements
	(m³ /h)	L*W*H (mm)	W*H(mm)	(W)	(individual)
KL-D-J40	4000	465*840*667	613*465	200W	1*4K
KL-D-J60	6000	770*647*667	421*465	200W	2*3K
KL-D-J80	8000	770*840*667	613*465	200W	2*4K
KL-D-J100	10000	770*987*667	761*465	400W	2*5K
KL-D-J120	12000	770*1152*667	926*465	400W	4*3K
KL-D-J160	16000	770*839*1250	613*1050	400W	4*4K
KL-D-J200	20000	770*987*1250	761*1050	800W	4*5K
KL-D-J240	24000	770*1152*1250	926*1050	800W	8*3K
KL-D-J320	32000	770*1560*1250	1325*1050	800W	8*4K
KL-D-J400	40000	1540*987*1250	926*1050	1600W	8*5K
KL-D-J480 (double-deck)	48000	1235*1560*1250	1325*1050	1200W	12*4K
KL-D-J480 (three layers)	48000	770*1560*1830	1325*1630	1200W	12*4K
KL-D-J640	64000	1540*1560*1250	1325*1050	1600W	16*4K

Note: 1. The images and data above represent standard air volume specifications for reference only. No prior notice will be given for any changes.2. Custom sizes with different air volumes are available upon request. For larger air volume requirements, please contact our technical team.



SOUNINY

One-Stop Oil Fume Solutions

Installation Notes



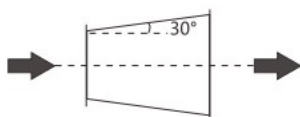
Installation Notes

Install the device properly according to the installation method.

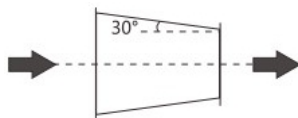
- (1) Determine the installation location of the EPS purifier based on the site conditions.
- (2) Determine the routing and layout of the air ducts.
- (3) Determine the fan installation location based on the site conditions.
- (4) Finally, the overall inspection and debugging.

Installation Construction Standard

Installation Technical Requirements



a . Enlarging reducer



b .Reducing reducer

A) Design of variable diameter ports: The bevel angle between the inclined edge of the variable diameter pipe (from small to large) and the axis must not exceed 30°. If this condition is not met, consider installing appropriate guide vanes or calculate the equipment's purification efficiency based on the pipeline wind speed.

B) The midline radius of the elbow must be $\geq 1.5D$ (otherwise, the wind resistance of the reducer will increase).

C) The purifier must be installed horizontally to prevent oil from being sucked out by the fan or remaining inside during oil drainage.

D) The distance between the oil fume purifier, fan, and hood must be at least 1.5 meters. Otherwise, excessive temperature or airflow turbulence may prevent the oil fume ions from properly charging, resulting in reduced adsorption efficiency.

E) The oil fume purifier must be precisely matched according to the specified configuration in this document .Failure to do so may result in unforeseen issues and irreversible damage to the equipment.

(2) Calculation of Duct Specifications

The pipeline design is based on the calculation method of "Selection and Installation Requirements of Oil Fume Purifier Fan."

Calculation Formula: $Q=3600 \cdot V \cdot S$

Q:is airvolume(m^3/h)

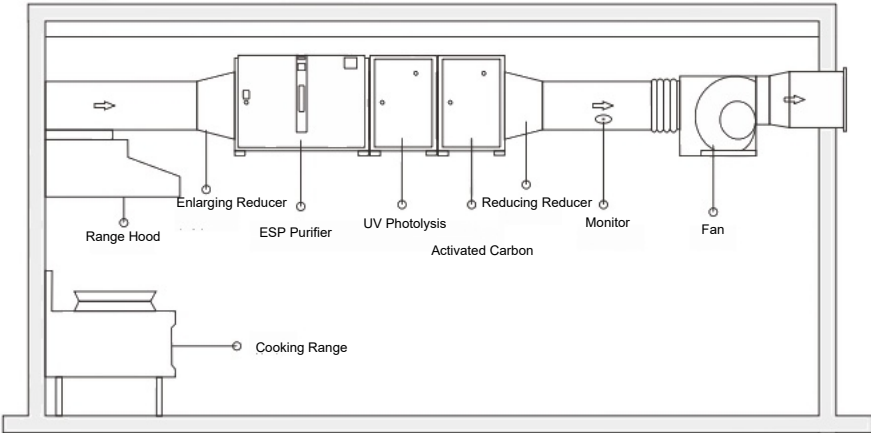
V:represents wind speed(m/s),with the design wind speed for ducts typically ranging from 8 to 10 m/s .

S:the cross-sectional area of the duct,

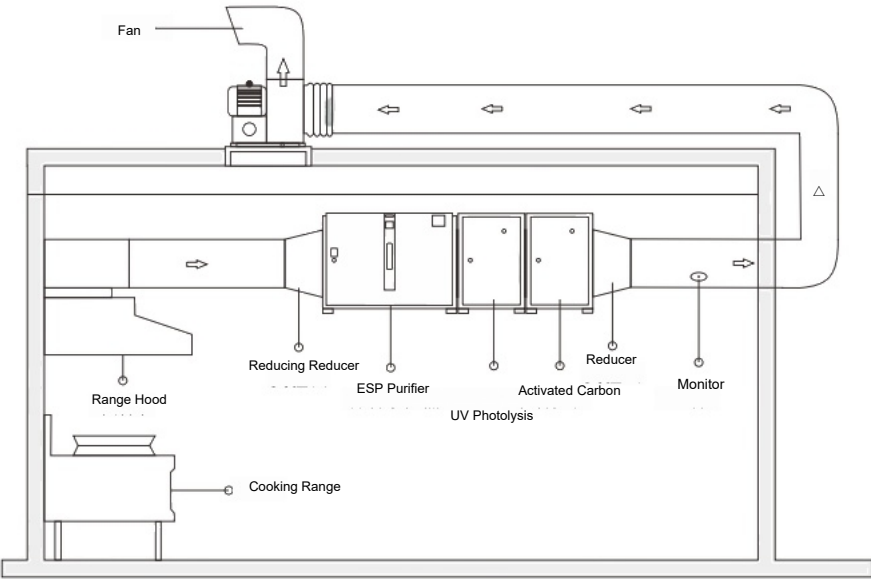
$S=a \cdot b$ for rectangular duct and $S=\pi r^2$ for circular duct

Insufficient cross-sectional area of the duct may cause excessive gas flow velocity.

Installation Diagram

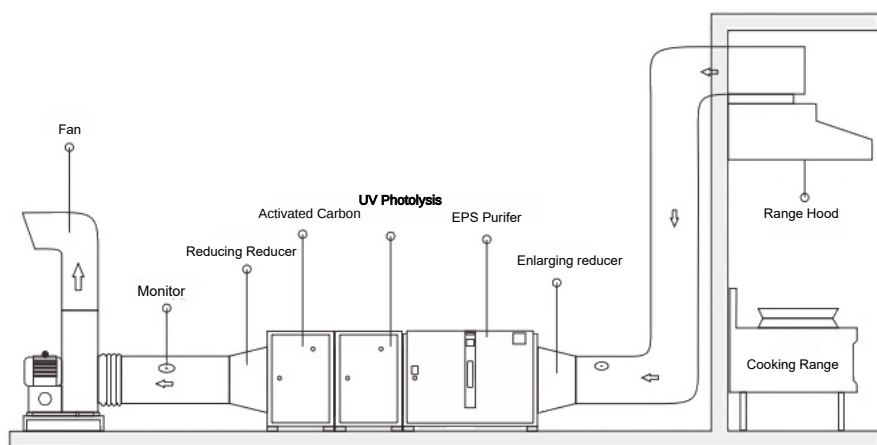


A. Installation diagram for "Indoor"

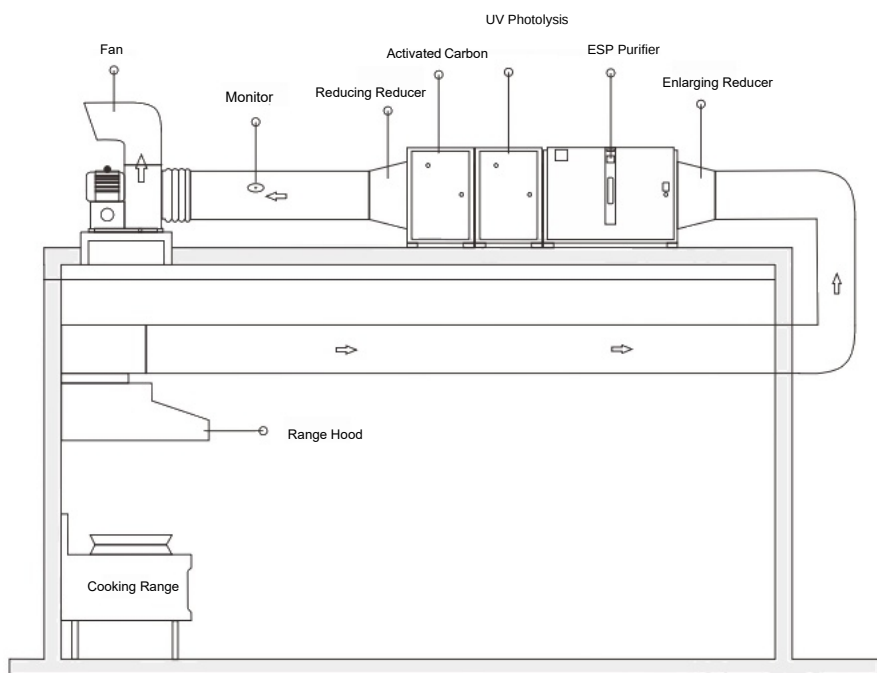


B. Installation diagram for "Indoor"

Installation diagram



C. Installation diagram for "Outdoor"

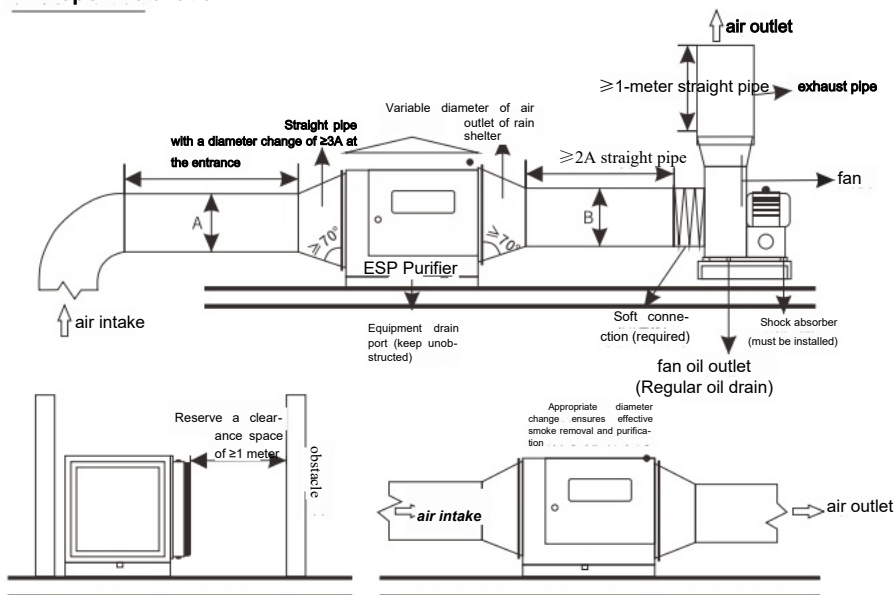


D. Installation Diagram for "Outdoor"

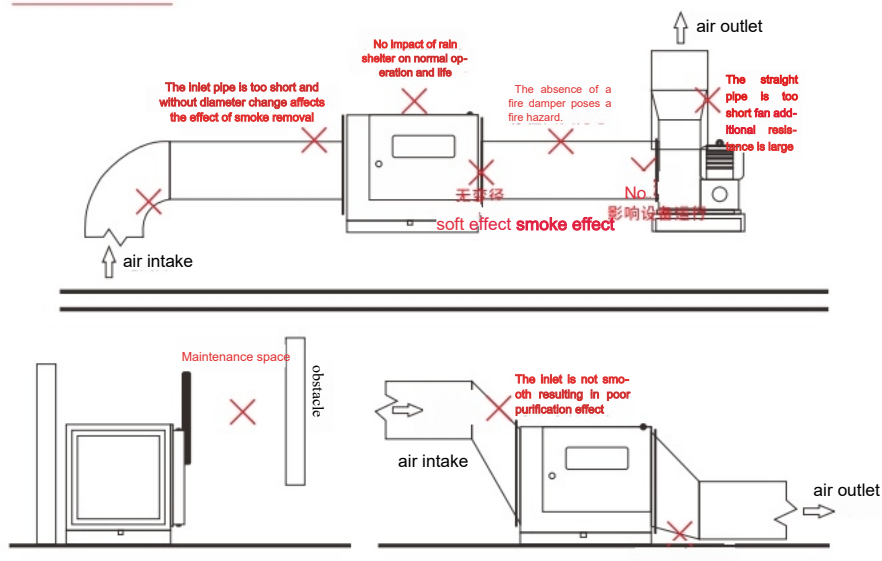
Installation Specification Drawing

Installation specification drawing

✓ Proper installation



✗ Improper installation



The air inlet is not smooth, resulting in poor purification efficacy

1 Device Installation Method

Equipment Installation Method: The installation location of the ESP purifier should prioritize both aesthetic appeal and future maintenance convenience. The installation method (hanging, ground-mounted, or bracketed) should be determined based on the site conditions.

(1) Hoisting installation method

- a. For air purifiers with a flow rate below 4000 (inclusive), the suspension rod can be directly secured to the M12 iron expansion floor slab, and must be fastened with two M12 iron expansion bolts and a No.5 angle steel.
- b. For air purifiers with a flow rate exceeding 4000, the floor slab must be drilled through, and the suspension rod should be secured with a round steel plate.
- c. The size of the suspension rod is determined by the purifier's capacity. Generally, the following matching is recommended: for air volumes below 4000, use a $\phi 10$ suspension rod; for air volumes above 6000,

Use a $\phi 16$ suspension rod. The purifier's base and bracket must be secured with M10 bolts.

- d. Lifting-type purifiers are typically installed at considerable heights, making it easier and safer to hoist them using a winch.

(2) Grounding installation precautions:

- a. The ground installation method is the simplest, but it is essential to ensure the ground is level. If the level is not met, it will hinder the oil fume purifier's oil discharge. Therefore, a leveling pad should be placed under the purifier's base.
- b. The purifier must be fixed to the ground with iron expansion or pre-buried bolts.
- c. A separate bracket should be provided for the duct's weight, and it must not be directly pressed onto the purifier.

(3) Bracket-type installation method:

- a. First, construct the purifier support frame according to the height. Considering its robustness, it is generally made of channel steel No.6 or above, with angle steel No.4 or above used for reinforcement. The purifier is fixed to the channel steel with bolts.
- b. The base can also be cast with cement, but the anchor bolts for the purifier must be pre-embedded.
- c. The duct weight should be supported separately and must not be directly pressed onto the purifier.

(4) The air purifier shall not be installed in enclosed wooden structures or suspended ceiling spaces. Adequate installation space must be provided, and a 1-2m platform (depending on specifications) should be maintained in front of the maintenance access door for cleaning, maintenance, and servicing.

(5) To ensure optimal purification efficiency, install ducts with matching cross-sections at both fan inlet and outlet, with a minimum straight pipe length maintained at each end. The inlet straight pipe should be 1.5D long, while the outlet straight pipe must reach 3 D (where D denotes the equivalent diameter).

$D=2AB/(A+B)$, where A and B are the side lengths of the rectangle tube.

(6) The relative humidity of the oil fume at the installation point must be below 90%. When a large amount of steam enters, the treatment efficiency drops significantly, which may cause malfunctions.

(7) When corrosive gas sources (e.g., coal boiler rooms) or combustible gas sources (e.g., near gas stations) are present nearby, the installation of purifiers is prohibited.

(8) Low-capacity purifiers cannot process high-volume exhaust gases and must be installed according to the actual treatment capacity.

(9) Installation method of the oil fume purifier supporting system.

a. Installation of fan

There are many kinds of fans, the general application of the fan is: mixed flow fan, centrifugal fan, axial flow fan, fan cabinet, so must adopt different ways of installation and different requirements according to different fans.

① Wall-mounted type: commonly used for axial flow and mixed flow fans, requiring a detachable pipe section with sufficient clearance for motor removal and installation during fan maintenance.

② When installing the fan, attention should be paid to its levelness, verticality, and lead wires. This installation method does not require the use of flexible connections.

③ The installation methods of hoisting, bracketing, and ground mounting are similar to those of the purifier. The difference lies in the requirement for vibration reduction measures on the fan, and the use of flexible connections between the duct and the fan.

b. Installation of air ducts

All equipment must be properly positioned first. Install the duct supports and hangers, then verify the precast ducts according to their routing before proceeding with installation.

1、Bracket and hanger spacing requirements: The distance between two brackets or hangers should not exceed 3 meters. For risers, each riser must be supported by at least three brackets.

2、All flange connections in the duct must be sealed with asbestos rope, and the flange screws should be tightened in a cross pattern, with all screws on the same side.

3、 Air duct installation requirements:

- (1) The allowable horizontal deviation for horizontal ducts after installation should not exceed 3mm per meter, with a total deviation not exceeding 20mm.
- (2) After installation, the verticality tolerance of vertical ducts should not exceed 2mm per meter, with a total deviation limit of 20mm.
- (3) The duct wall should maintain a minimum 150mm clearance from the wall surface to allow sufficient space for tightening flange screws.
- (4) For ducts above 1.5 meters from the ceiling, windbreak measures must be implemented.
- (5) The length of flexible connections should not exceed the standard 250mm. To prevent twisting during system operation, ensure the installation is properly tensioned. For flexible connections installed at the fan's suction end, slightly tighter tension can be applied to prevent being sucked in during rotation, thereby reducing the cross-sectional size of the connection. During installation, avoid using flexible connections as alignment pipes or reducers. Reinforce special high-volume ducts to prevent vibration.
- (6) The longitudinal closure seams of ducts must be staggered and shall not be located at the bottom of the duct. Ducts conveying large amounts of steam must be installed behind the outlet pipe of the purifier and shall have a slope of 0.01~0.05, directing towards the drainage device.
- (7) Removable joints for ducts and fittings shall not be installed within walls or floor slabs.

Cleaning Notes

CLEANING CONSIDERATIONS



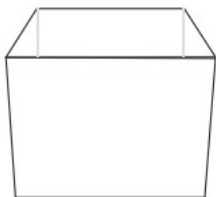
Cleaning Precautions

Cleaning considerations

When cleaning and maintaining the equipment, follow the specified procedures to properly clean the ESP Cells and maintain the equipment.

1. Preparation of ESP Cells Cleaning Tool

Large-scale electric field cleaning chamber (capable of accommodating at least one ESP Cell), cleaning solution and water, high-pressure water gun, screwdriver, protective goggles, and protective gloves.



Cleaning chamber



Special cleaning agent



water



high-pressure water jet



eye shield



bolt driver



protective glove

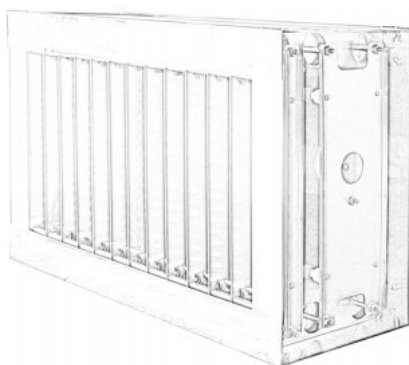
2. ESP Cells Pull out Steps

First, disconnect the power switch of the purifier (cut off the main power supply) to ensure safety; then open the ESP Cell maintenance door and use a screwdriver to short-circuit the anode and cathode of the electric field to discharge residual electricity; finally, remove the electric field.

Always turn off the power before opening the electric field maintenance door.

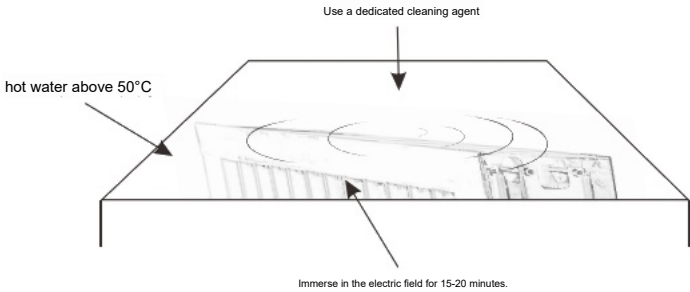


Use a screwdriver to short-circuit the positive and negative terminals of the electric field, releasing residual charge. After measuring the quantity, the electric field is then removed.



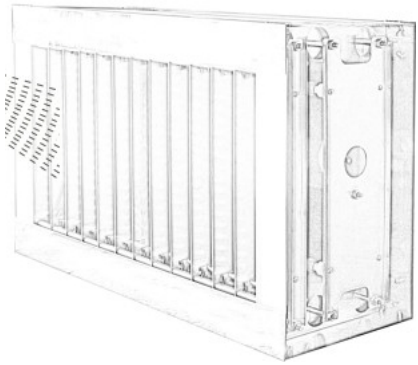
3 ESP Cells Immersion Steps

First, fill the tank with hot water above 50°C, then add the specialized cleaning agent at a mass ratio of 1:20 and stir thoroughly with a tool. Submerge the ESP Cells to be cleaned in the tank (the cleaning agent should fully submerge the ESP Cells) for 15-20 minutes.



4 ESP Cells Cleaning Steps

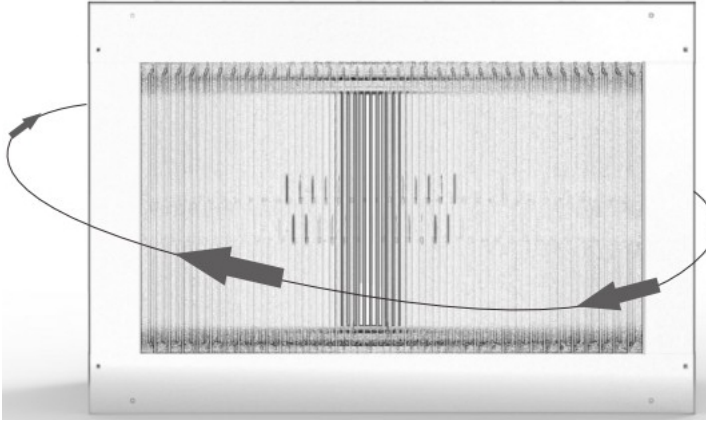
Remove the soaked ESP Cells and flush it with high-pressure water jet. Clean the insulator surface of oil stains with a clean cloth. (If the insulator is damaged, replace it immediately.)



Check for any debris in the ESP Cell. If debris is present, remove it. Replace the insulator immediately if it is damaged.

5. ESP Cells EXAMINATION

After completing the ESP Cell cleaning, inspect whether the positive and negative electrode plates have deviated from the ESP Cell or exhibited any deformation. If no deformation or abnormalities are observed, the cleaned ESP Cell should be dried before being returned to the equipment for use. (If any abnormalities are detected, contact the manufacturer's maintenance personnel for repair.)



Special-Precautions

(1) The circuit system of the high-voltage electrostatic purifier must not be touched during operation to prevent high-voltage electric shock accidents. Equipment maintenance

The purifier must be powered off before operation.

(2) The ESP Cell must be cleaned regularly to avoid affecting processing efficiency and causing accidents. The cleaning interval for the electric field unit is 1 to 3.

At locations with extended operating hours and high grease fume concentrations, the cleaning cycle may be appropriately shortened.

(3) During normal operation, the fan and purifier should not be frequently switched on and off. Due to the delay function of the purifier, at the beginning The 8-

minute ESP Cell does not operate, so frequent power-on cycles are equivalent to inactivity, which may degrade processing performance and shorten service life.

(4) The power supply capacity must match the purifier's requirements; otherwise, it will not function properly.

(5) Do not turn on the purifier's power when the ESP Cell is not connected, as this may cause insulation breakdown under no-load high voltage and lead to discharge accidents.

Common Faults and Causes

Fault phenomenon	Failure cause	Elimination method
① The startup indicator light is not on.	Power not connected	Check if the 220V power supply is functioning properly.
		Check the control circuit and restore power supply
	Signboard malfunction	Check if the line is connected
② Work light on, maintenance light on, fault light off	Arcing fault	Check for deformation or loosening of the electric field
		Check if the plate is deformed
		Cleaning electric field
		Clean or replace the insulator
		View electric field installation
		Check the installation of the energized spring and contact parts
	Leakage fault	Cleaning electric field
		Replace insulator
		Change the high-voltage package
③ Worklight, Maintenance Light, The fault light is flashing.	Open fault	Check if the electric field is reversed
		Check if the energized spring and contact parts are installed incorrectly
		Check if the high-voltage terminal post is in contact with the spring
④ Work light off, maintenance light on, fault light off	Short trouble	Check if the plate is deformed
		Remove foreign objects between the plates
		Check if the high-voltage terminal is in contact with the spring
⑤ Worklight off, maintenance light off, fault light on	Power failure	Repair or replace the power supply
⑥ Frequent "click, click" discharge sounds	Foreign bodies in the electric field collection area	Remove the electric field and clean the abnormality
	Electrode deformation	Detect and correct distortion
	There is a lot of residue on the electrode plate.	Cleaning electric field
	Poor contact in the high-voltage area	Reinstall the electric field and contact parts
⑦ The cooking fumes cannot be removed in time.	Air intake at the outlet of the oil drain pipe	Drain the oil pipe
		Place the outlet in a liquid to counteract the air pressure differential
		Oil seal for exhaust duct

In case of special circumstances, please turn off the power supply and contact our company immediately.

Oily Fume Purifier Product Warranty Card (Merchant Copy)

User Information Bar

Customer name _____

postal address _____

Contact number _____

Installation address _____

Product name _____

Product INFORMATION SECTION

Product model _____

Device wind quantity _____

Date of purchase _____

Device code _____

Installation site _____

Repair date _____

Retailer information column

Dealer name _____

Dealer address _____

Retailer phone _____

Dealer (signature):

Note: (1) Please keep this card properly. For repairs, contact the Shuangni After-sales Service Center with the warranty card, purchase invoice, and this card.

(2) Our company provides a 1-year warranty on the complete equipment purchased by customers, with a 5-year warranty for power supplies and a 6-year warranty for insulators.

(3) Our company's warranty card is only for use within China (excluding Hong Kong, Macau, and Taiwan).

(4) The warranty card must not be altered or forged.

(5) After the warranty period expires, our company provides lifetime maintenance services for a fee.

Customer confirmation signature:

Product Warranty Card for Oil Fume Purifier (User Copy)

User Information Bar

Customer name _____

postal address _____

Contact number _____

Installation address _____

Product name _____

Product INFORMATION SECTION

Product model _____

Device wind quantity _____

Date of purchase _____

Device code _____

Installation site _____

Repair date _____

Retailer information column

Dealer name _____

Dealer address _____

Retailer phone _____

Dealer (signature): _____

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Customer confirmation signature: _____



Contact Us by Wechat



Contact us by Whatsapp

SOUNINY

Shenzhen Souniny Environmental Technology Co., Ltd.

Website: <https://www.souniny.com>

SOUNINY

One-Stop Oil Fume Solutions