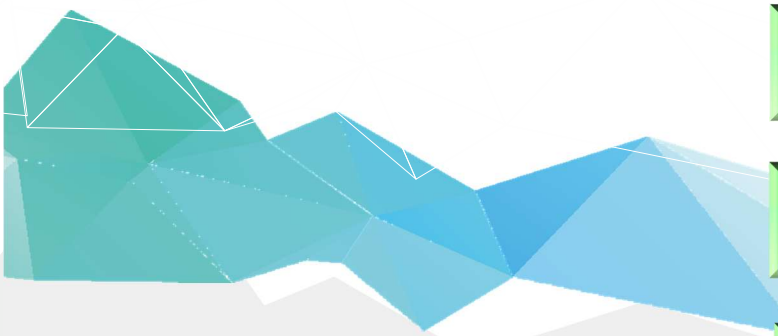
Revolutionizing Industrial Air Purification



- FUMES EXTRACTOR
- OIL MIST COLLECTOR
- WELDING FUMES EXTRACTOR
- INDUSTRIAL DUST COLLECTOR
- DRY / WET SCRUBBERS

Works : C-27, MIDC Waluj, Aurangabad-431136. | Regd. Off. : HIG 64, R 28, Mhada, N-7 CIDCO, Auranagabad-431003.
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MIST/ FUMES/ SMOKE COLLECTOR

HSPE Series

Honeycomb type Tubular Electrostatic Precipitator

State of the art latest New Technology machine for Oil Mist / Fumes / Smoke Filtration
Solve all kinds of oil Mist / Fumes / Welding Smoke and purification problems for you!
Applicable to Machining center / CNC / milling / Welding Smoke / Induction Heating Smoke/ Furnace smoke /PVC manufacturing industry/ Lather industry/ Polyfilm manufacturing industry

Features

Large air volume and low energy consumption

- Equipped with high efficiency fan, large air volume can be realizedwith low energy consumption

ESP cell filter is permanent (No replacement)

- Filter cells are many times washable & reusable

Filters capture smallest particles upto 0.01 micron

- The tubular filters with electrode at center improves the filtering accuracy and efficiency.

High Efficiency - very low pollutant sneakage

- System has very high efficiency from 99% to 99% for various sizes of particles.

Recovery of pollutant

- Recovery of pollutants such as oil mist/ water mist/ paints, DOP (Dioctyl Phthalate) Plasticizers.

Less cleaning frequency of cells

- Less cleaning frequency of cells required as there is uniform electrostatic field across tube length.

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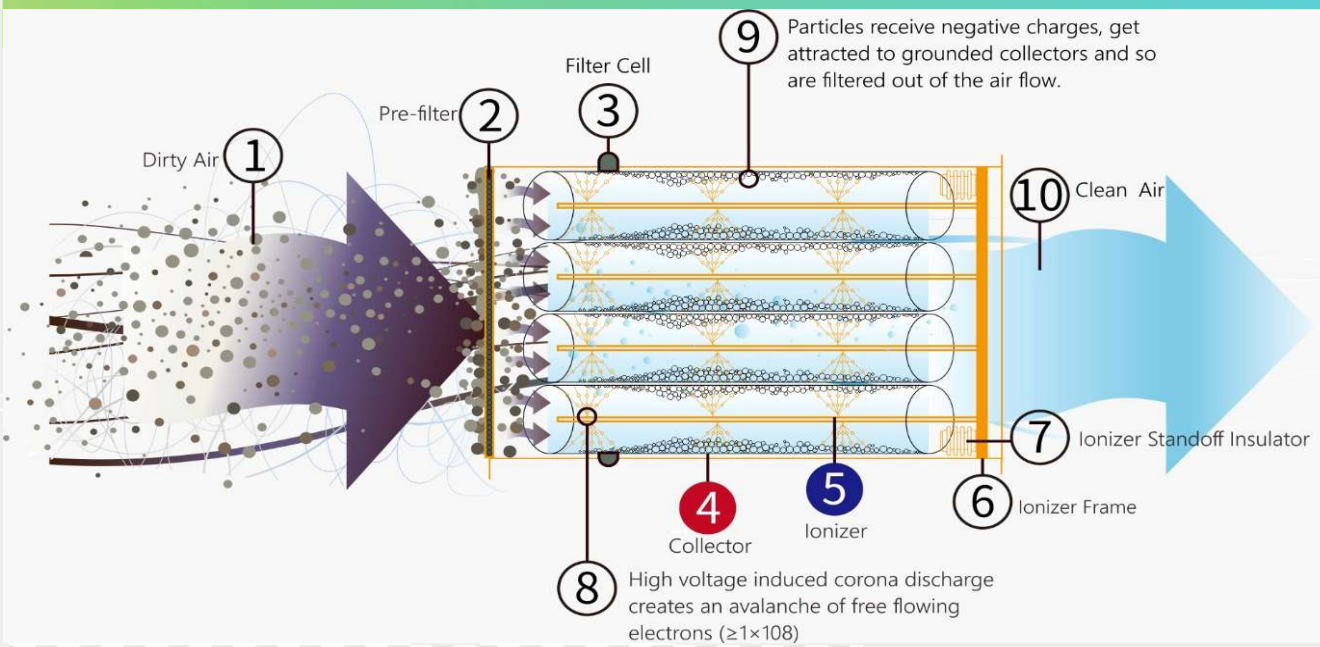
MIST / FUMES / SMOKE COLLECTORS

HSPE Series:Honeycomb filters

Working principle



Problem detection in ESP machine: As shown in the figure, if any situation occurs on the device, the operation code will be displayed here; If a code appears, we only need to find the corresponding solution based on the displayed code.

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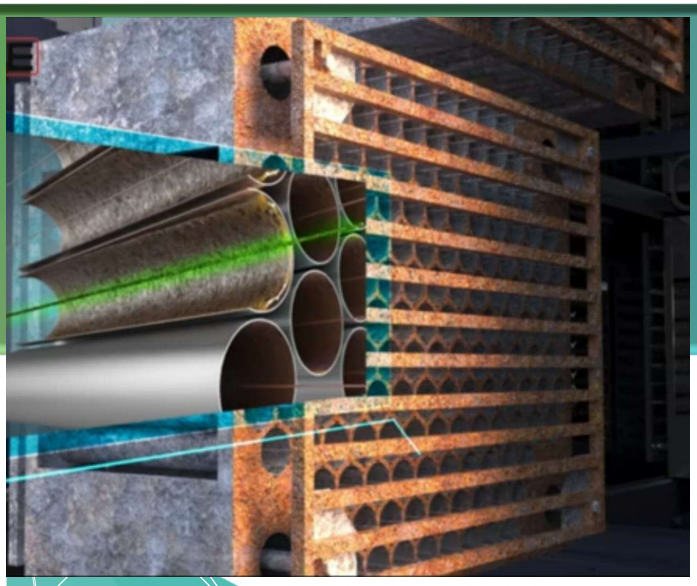
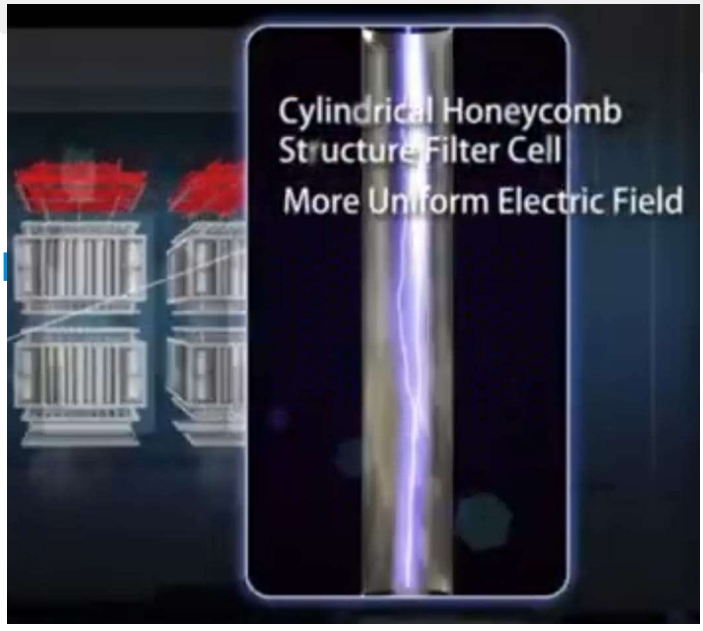
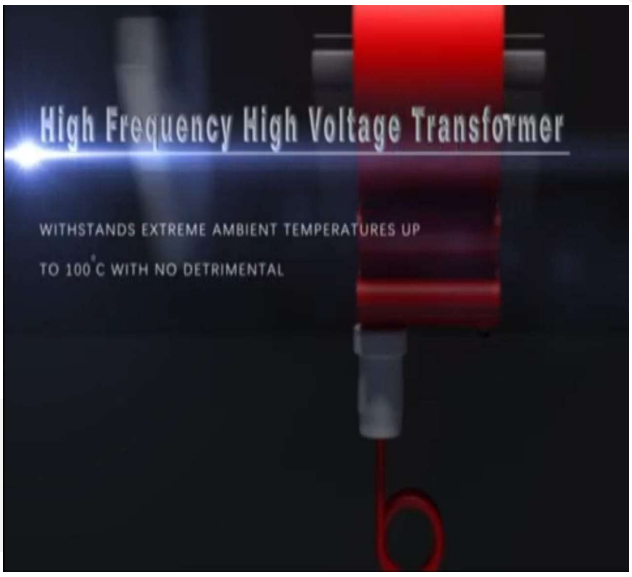


HSPE Series
Tubuar Honeycomb cell Construction

Honey Comb Filter cell arrangement where electrode is at the axis of the Tube giving it uniform electrostatic field across length and inner periphery Of the cylindrical tube



Vaccum encapsulated High frequency High voltage transformer giving a less chance for spark and overheating of transformer. Safe operation



Better uniform collection of pollutant across the length of the tube giving it better efficiency and reduced cleaning frequency approximately 3 to 5 times

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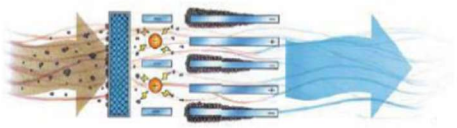
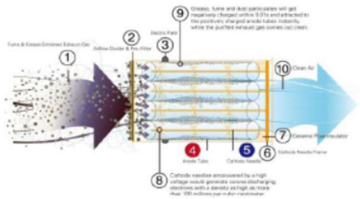
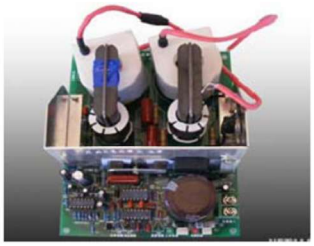
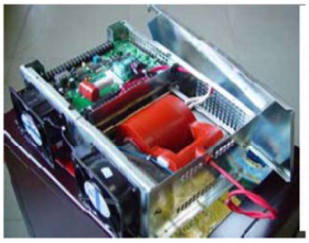
Comparison between Plate type ESP and Honey Comb Tubular ESP

Item	Plate ESP		Tubular ESP
	Plate-wire ESP	Flat Plate ESP	
Working Principle			
Filter Cell Structure	 A row of thin wires/ narrow plates followed by a stack of large flat plates oriented vertically, with the plates typically spaced about 1 cm to 18 cm apart, depending on the application		 Parallel arrangements of cylinders formed as a honeycomb, with high-voltage electrodes running on their axis
Power Pack	 Type: self-oscillating converter Working Current: 0~10mA Discharging voltage: 5-6KV Collecting voltage: 10-12KV Maximum Power output: approx. 100W		 Type: High Frequency half bridge resonant converter Working Current: 10~80mA continuously adjustable Working voltage: 10~20KV Maximum Power output: approx. 1500W
	When we used plate ESP power packs on our filter cell, the filter cell either won't work or works at a 30-50% collection efficiency		When we used our power pack on plate ESP filter cell, the voltage is too high so there is always arcing inside the filter cell
Sneakage	Two stage design, leaving a small part of gas flow that moves around the		A one stage design where all the gas passes through the tube
Allowable gas velocity	0.9-3m/sec, 1.5-1.8m/sec optimum		2-5.5m/sec,3.5-4.5m/sec optimum
Effective collection area	Typically 1-1.6sqm per 1000CMH		1.2-2sqm per 1000CMH
	According to our calculation, the effective collection area per unit volume of our ESP would be theoretically 1.6 times that of a typical plate ESP, given the same distance between electrodes. This does not necessarily mean that every tubular ESP features an absolutely higher efficiency than a plate ESP. Efficiencies can be the same. For tubular and plate ESPs' featuring the same collection efficiency, tubular ESP would be smaller than plate ESP. Efficiency of Plate ESP can also be increased by narrowing the distance between electrodes. But that would increase the risks of arcing inside the filter cell. To reduce such risks, lower voltage is applied to plate ESP with narrow electrode spacing, resulting in even lower efficiency. So it's universally accepted that tubular designs offer higher efficiency per m2 and smaller size.		
Performance Stability	Electrical breakdown tends to happen at sharp edges. Plate ESP obviously features more sharp edges between discharging and collecting parts. There are also more insulators inside a plate ESP cell, increasing the risks of arcing caused by cracked or dirty insulators.		
Airflow Direction	Left to Right, or Right to left (if wrongly configured, users will have to put the unit upside down to make things right)		Reversible (bidirectional) smoke inlet direction (just make sure the perforated prefilter always stays at the inlet)
Mechanical strength	Tubular ESP filter cell features a higher mechanical strength, this can be told from the way the filter cell is structured. This ensures a longer service life and better durability when it comes to maintenance and cleaning procedures. While the fragile structure of plate ESP filter cell makes it easy to get damaged during maintenance and cleaning procedures, and difficult to repair.		
Cleaning	More cells to clean. Vigorous washing and scrubbing may be required to completely clean the collection plates. Risks of plates clogging due to fast build-up of grease are especially high for those plate ESPs' with very close electrode spacing. And it's almost impossible to clean such plate ESPs'.		Less cells to clean. Robust structure and specially designed cleaning device ensures the ease of complete cleaning. 
Primary application	Collect dry particles		Collect fine wet and sticky particles, such as oil mist from fabric heatsetting process, airborne plastisol from PVC products drying ovens, cooking fume and grease from commercial kitchens, coolant vapors from CNC machining lathes, etc
	Cement kilns, incinerators, boilers, cracking units, sinter plants, furnaces, coke oven batteries, etc	applications with high-resistivity particles with small (1-2 μm) diameters e.g. indoor air purification	
Price	Typically cheaper than tubular ESP		Typically more expensive than plate ESP
Applicability for oil mist collection	Low	Medium	High

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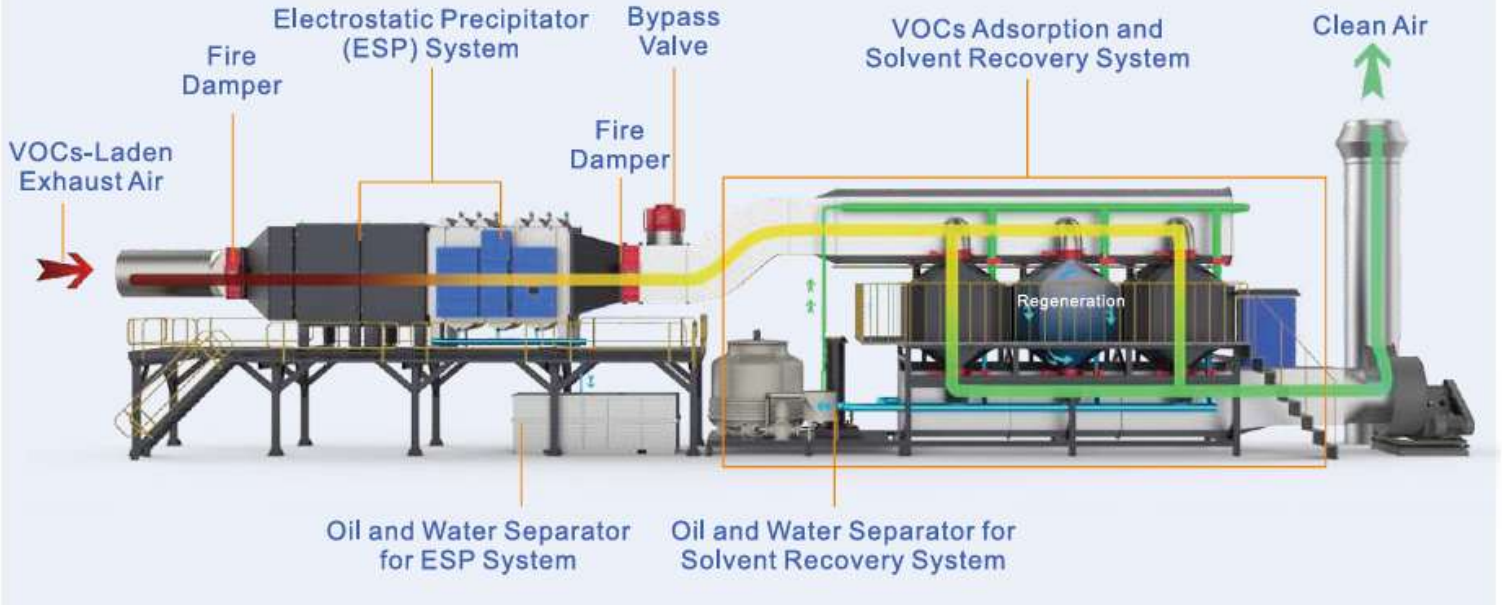
VOCs (Volatile Organic Compounds) Control

Control / Recollection / Recycling systems for Paintshops, PVC, Textile & Rubber Industries

VOCs (Volatile Organic Compounds) are one of the major atmospheric pollutants, posing significant risks to human health. They exhibit toxicity, irritability, and potential carcinogenic properties, potentially causing a range of health issues, including headaches, reduced concentration, allergic reactions, and cancer. Therefore, effectively controlling and reducing VOC emissions is crucial for protecting both the environment and human health.

Typical ESP Filtration, VOCs Adsorption and Solvent Recovery System Design

For manufacturing processes that utilize valuable solvents, the ideal emission control solution is to have pre-treatment equipment such as the cooling coils and subsequent electrostatic precipitator (ESP) to get rid of particulate matters and pollutants with higher boiling points in the airstream, then the surface-modified activated carbon adsorbers to capture the organic compound (VOC) solvents. When recovered, such solvents could be reused directly in the manufacturing process, generating substantial savings. Nitrogen or steam can be used to regenerate the activated carbon.



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Other Auxiliary Devices

Carbon Filter Deodorizer

Water Scrubber

ACTIVATED **CARBON FILTER**

To be installed downstream of ESP's to further remove malodorous gases.