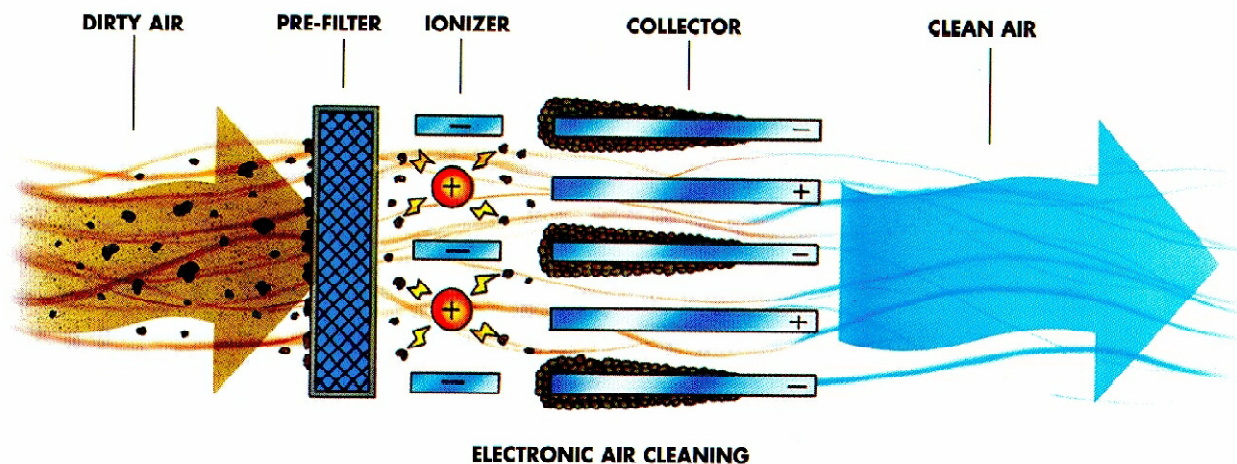


ESP is a new generation electrostatic precipitator used to control process generated airborne contaminants. ESP is a reliable solution for both indoor air quality problems and contaminated exhaust air. It's available in side access units for use with central air handlers or as stand alone fan powered unit.



Dependable high frequency electronics, safe/no-short charging system, rugged ionizer electrodes and improved automatic cleaning are just a few of the innovations developed to make ESP the most reliable ESP ever. High efficiency particle collection is delivered instantly and continuously. The extremely low resistance to airflow means less fan horsepower is needed, compared to conventional media filtration, and since resistance to airflow is constant, the system air volume is always maintained. Optional bonded activated carbon can be added for odor control, making ESP the **IDEAL SOLUTION** for ventilation or exhaust air quality problems.

Reliability, high performance and low operating cost make ESP an excellent choice for indoor air cleaning or exhaust air pollution control.

## Key Features

- New Generation ESP designed for dependable operation
- Reliable high frequency electronics do not use fragile ionizing wires or insulators
- Specified efficiency is instant and constant
- Resistance to airflow is a constant 0.25" w.g., resulting in reduced fan horsepower
- Constant resistance to airflow prevents fluctuations in system air volume
- Permanent aluminum collector cells never need replacing
- Built-in automatic cleaning and PLC controls
- Optional bonded carbon for gas/odor control
- Optional custom blower/motor package
- Optional safety filter

## Applications

ESP delivers dependable, continuous duty operation, controlling a broad range of process generated airborne contaminants.

Below is a partial listing of ESP applications:

- Commercial cooking kitchen exhaust
- Machine tool coolant mist
- Welding and soldering fume
- Cold heading smoke
- Forging lubricant effluent
- Heat treating smoke
- Vinyl extrusion plasticizers
- Rubber curing and molding smoke
- Textile finishing exhaust
- Commercial HVAC systems

# ESP COMPONENTS



SYSTEM PLC CONTROL



HIGH VOLTAGE POWER



ESP  
(metal mesh mist eliminators removed)



Detergent Dispenser



System Accessories  
(solenoid valve, backflow preventer,

## System Description

ESP Side Access Model (SA) is a factory packaged system including side access housing with upstream and downstream flanges, integral wash system, pre and post mist eliminators, electronic collectors, system control, detergent dispenser, and accessories. The factory assembled system is designed for mating to air handlers and ventilation systems or as a stand alone unit factory furnished blower/motor package.

The System PLC Control is programmed to start and stop the system according to customer requirements. At a predetermined schedule, the Control also initiates a water/detergent wash cycle to clean away collected contaminants. Spent wash water is drained from the bottom drain pan, ESP is forced dried and ready to continue operations. Start, stop and wash functions can also be initiated by manual push button.

## System Accessories

Each ESP Model SA is furnished with the following standard accessories.

Pressure gage .....	1 each
Wash water strainer .....	1 each
Ball valve .....	1 each
Back flow preventer .....	1 each
Solenoid valve .....	1 each
Detergent .....	55 gal

## Utilities

Electrical: Standard: 120Vac, 1 Ph, 60 Hz  
 Optional: 208 - 230 Vac, 1 Ph, 50/60 Hz  
 Wash Water: (See Selection Table) gpm @ 50 psig  
 System Drain: Integral 3" FNPT



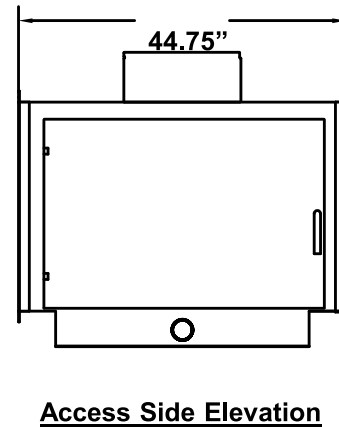
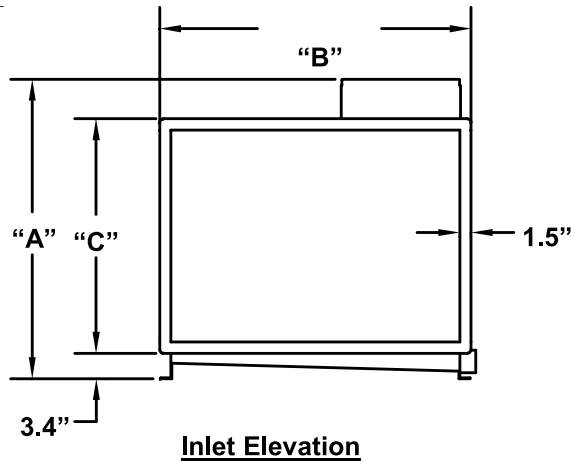
## Options

Transitions, plenums and steel channel support base are furnished to the customers specifications.

**Odor/Gas Phase Control:** Bonded, Activated carbon panels are furnished to remove a broad range of both base and acid gases. Panels are held in place by gasketed, extruded aluminum tracks arranged in a Vee bank configuration.

**Blower:** Custom blower/motor and motor starter combinations are available in a variety of sizes and styles to meet system air volume and static resistance requirements.

# ESP Size Selection Table

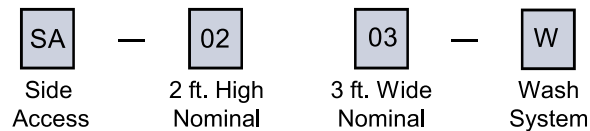


Model	Face Area(ft <sup>2</sup> )	Air Volume (cfm) (1,2)Efficiency		Dimensions (in)			(3)Wash Cycle		(4)Wt (lb)
		95%	90%	Overall A	Inlet/Outlet B	C	Water gpm	Detergent gal	
SA-0203-W	5.6	2,000	2,500	40 1/4	41 7/8	31 1/2	7.2	.72	510
SA-0204-W	7.6	2,500	3,500	40 1/4	54 3/8	31 1/2	9.6	.96	570
SA-0205-W	9.4	3,500	4,500	40 1/4	65 1/8	31 1/2	12.0	1.20	650
SA-0206-W	11.3	4,000	5,500	40 1/4	76	31 1/2	14.4	1.44	785
SA-0403-W	11.3	4,000	5,500	64 1/8	41 7/8	55 3/8	14.4	1.44	710
SA-0404-W	15.2	5,500	7,000	64 1/8	54 3/8	55 3/8	19.2	1.92	810
SA-0405-W	18.9	6,500	9,000	64 1/8	65 1/8	55 3/8	24.0	2.40	930
SA-0406-W	22.6	8,000	10,500	64 1/8	76	55 3/8	28.8	2.88	1,110
SA-0407-W	26.4	9,000	12,500	64 1/8	88 5/8	55 3/8	33.6	3.36	1,225
SA-0408-W	30.0	10,500	14,500	64 1/8	99 3/8	55 3/8	38.4	3.84	1,335
SA-0409-W	33.8	12,000	16,000	64 1/8	110 1/8	55 3/8	43.2	4.32	1,445
SA-0603-W	16.9	6,000	8,000	88	41 7/8	79 1/4	21.6	2.16	860
SA-0604-W	22.8	8,000	11,000	88	54 3/8	79 1/4	28.8	2.88	1,100
SA-0605-W	28.3	10,000	13,500	88	65 1/8	79 1/4	36.0	3.60	1,180
SA-0606-W	33.8	12,000	16,000	88	76	79 1/4	43.2	4.32	1,315
SA-0607-W	39.6	14,000	19,000	88	88 5/8	79 1/4	50.4	5.04	1,500
SA-0608-W	45.0	16,000	21,500	88	99 3/8	79 1/4	57.6	5.76	1,685
SA-0609-W	50.8	18,000	24,000	88	110 1/8	79 1/4	64.8	6.48	1,860

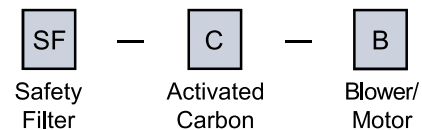
(1) MIL-STD-282, DOP Smoke Penetration Test Method (2) Capacities may be rounded to nearest 500 cfm  
 (3) Based on 50 psi water pressure. Typical wash cycle is 4 mins. (4) Total system net weight

## Model Number Development

### Standard



### Optional Features



## Unit Selection Guide

- From the Size Selection Table above, select the Model SA with Air Volume and Dimensions that meet the required efficiency and arrangement.
- Two Model SA units of the same height may be arranged side-by-side to create a larger, multi-section unit. Specify one unit with left hand and one unit with right hand access doors.
- Each Model SA is shipped complete with Power Pack, System Control, Detergent Dispenser and System Accessories as shown on Page 2.

# CADDY ESP

## *Electrostatic Precipitator Engineering Specifications*

### General

The electrostatic precipitator (ESP) shall be the two stage, dual voltage, plate type, sized to clean the airflow capacities scheduled on the Contract Documents at an efficiency of (specify %) when tested per MIL-STD-282, DOP Smoke Penetration Method.

### Configuration

The ESP shall be furnished in a side access housing, fabricated from 14 gage galvanized steel, continuous welded, primed and painted. The housing shall be furnished with gasketed, hinged access door, flanged inlet/outlet collars and sloped bottom drain pan. The housing shall be tracked for and furnished with aluminum pre and post mist eliminators.

### Ionizer-Collector Cells

Ionizing-collecting cells shall be of industrial design integrity and single unit construction. The cells shall be all aluminum construction except the ionizing electrode shall be of the rigid stainless steel type. Repelling and collecting plates shall be positively retained in place using tie rod and tubular spacer design. High voltage insulators shall be molded from structural, self-glazing ceramic; shall contain no appurtenances; shall be of radial and bilateral symmetry; and shall contain no high voltage penetrations.

### Built-in Cleaning System

Detergent, wash and rinse water shall be applied by oscillating copper manifolds containing brass spray nozzles, located on both the air entering and air leaving side of each cell tier. Complete, effective washing of all ionizing-collector cell surfaces and all appurtenances shall be provided. Drive motors, used to oscillate the manifolds, shall be high torque, gear reduced, totally enclosed fan cooled type, and be permanently lubricated. Drive linkage shall be the rigid, positively fastened type without tracks or sprockets.

A detergent dispenser assembly shall be provided and shall consist of a (specify 30, 55 or 100) gallon anti-corrosive reservoir, positive displacement pump, motor, and flow volume control valve.

Solenoid valve, strainer, backflow preventer, ball valve, pressure gage and an initial supply of detergent shall be furnished by the ESP manufacturer.

### Control and High Voltage Power Supplies

The System Control shall be the programmable logic (PLC) type, furnished in a NEMA 3R enclosure, preprogrammed to sequence the ESP through wash cycles at a schedule to be determined with the Owner. Integral electronic time clock with manual override shall be provided.

High voltage power supply, furnished in a NEMA 1 enclosure, shall be the high frequency, solid state type, supplying a dual voltage and current output specified by the ESP manufacturer. Power supply shall have a regulated input and output for line fluctuations of 10% and shall have a current limiting shutdown and restart feature.

The face panel of the enclosures shall contain indicators for electronic air cleaner control status (run, wash, etc.), individual power supply, primary circuit indicating light, monitoring instrumentation, and on-off switch.

### Electrical Interlocks

All access to ESP and high voltage power packs shall contain electrical safety interlocks which de-energize the primary power circuit prior to accessing high voltage.

### Optional

Blower/motor, motor starter, channel iron hang base and odor control custom selected to meet individual requirements.



Each ESP Side Access system is ETL listed, conforming to ANSI/UL STD 867 & UL STD 710.