eLine: Electrostatic Separator

Standard for clean air

Efficient filtration of adhesive, highly viscous aerosols from process exhaust

As an example, during die casting processes, extremely adhesive emissions are created. The sticky characteristic of these emission are a real challenge for effective separation through any filter media.

eLine separates aerosols so well that the cleaned air can be recirculated back into the production plant

eLine Electrostatic Aerosol Separator – maximum efficiency 24/7, with integrated cleaning technology

Efficient cleaning of process exhaust air

Various applications result in a diverse composition of process exhaust air. Generally, the resultant particulate can be dry, damp or occasionally adhesive.

Adhering to limit values for air pollution control requires continuous, long-term functionality of the separator and all its corresponding system components in order to effectively filter process emissions.

However, process parameters can vary, requiring experience and flexible system reconfiguration options.

Keller has developed specialized filtration and extraction technologies geared toward individual requirements.

Problem: adhesive, highly viscous aerosols

Adhesive aerosols are produced as a result of the addition of a separating agent or lubricants during die-casting processes or screw machine thread rolling.

eLine reliably and efficiently separates adhesive emissions.

Capturing exhaust

In die-casting machines with an open design, suction through a single or multi-part hood offers the best filtration results.

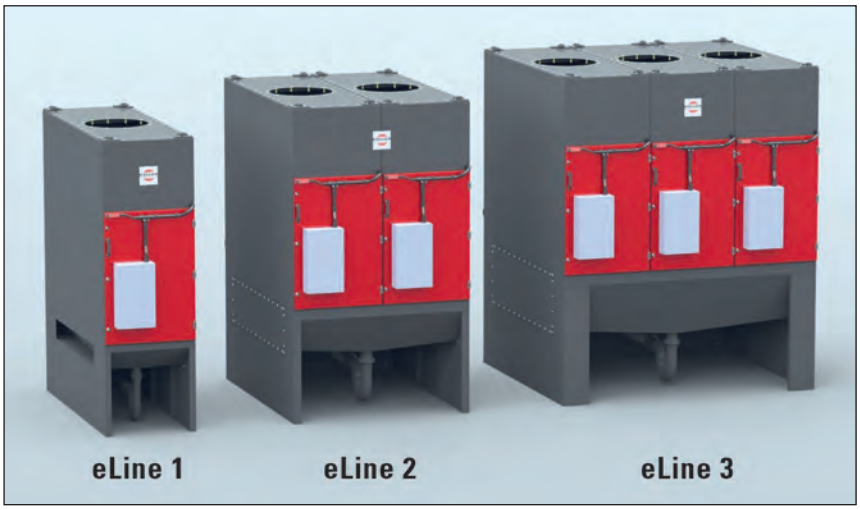
With single suction, the eLine separator can be positioned directly onto the hood frame in order to save space.

A modular design

The eLine electrostatic separator was designed as a flexible and scalable, high performance module.

The modular design allows for central separation systems with shared functions.

For uninterrupted operation 24/7, an additional module can be installed to bridge the cleaning cycle.



eLine speparators are available in three sizes

Technical data

	eLine 1	eLine 2	eLine 3
Max. air flow	3,000 cfm (5000 m³/h)	5,900 cfm (10000 m³/h)	8,800 cfm (15000 m³/h)
Sound	all models < 75 (dB(A))		
Weight	2200 lbs (1000 kg)	4400 lbs (2000kg)	6600 lbs (3000 kg)
Dimensions (L/W/H)	30" x 91" x 91" (750 x 2300 x 2300 mm)	60" x 91" x 95" (1500 x 2300 x 2400 mm)	89" x 91" x 99" (2250 x 2300 x 2500 mm)
Optional rinsing device	To clean collector surfaces from adhesive particulate during system downtimes		
Optional secondary filter stage	H13 filtration efficiency > 99.995 %		

Filtering Process

Process exhaust air is pulled through a pre-separator where large particles are separated.

The remaining exhaust is directed into the Ionizer, where emission particles are statically charged.

The collection stage follows, where the air and electrically charged particles flow through densely fitted plates. The positively charged plate side pushes the particles into the negatively charge plate side, where particles discharge their energy.

Adhesive particles and all other pollutants cling to form deposits that must be removed at regular cleaning intervals.

The separation principle is based on the fact that positively charged particles and similarly charged plates repel each other.

Automatic cleaning

The eLine is equipped with optional fluid cleaning.

Collector plates, as well as the ionization chambers and rectifying demisters, are cleaned of emission deposits by an automatic cleaning cycle. This is achieved in an environmentally-friendly manner by recycling the cleaning water inside a circulating system with automatic sedimentation of suspended matter.

The automatic cleaning system relieves the operator of burdensome cleaning work.

Clean air recirculation

The eLine electrostatic separator was designed for the return of clean air back into the production plant.

Efficient venting outdoors is also feasible.

Utilizing process heat

Some energy-saving regulations mandate the use of heat recovery systems in ventilation and air conditioning systems with air flows over 2,350 cfm (4000 m^3/h).

We can meet these requirements with our thermal energy recovery system ProTERM, even if the clean air is vented outdoors.

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