

ENA coolant mist separator for cooling lubricant aerosols



Coolant aerosols reliably extracted and filtered



Water-soluble aerosols are released from coolants during cutting processes.

The Task

Our coolant mist separators ENA-D remove water soluble aerosols created by coolants during cutting and metalworking. Reusable wire mesh filters effectively separate coolant mist aerosols. Our product lineup

includes a graduated series of systems with air flows up to 60,000 m³/h, which can be customized to even larger airflows by their modular design.

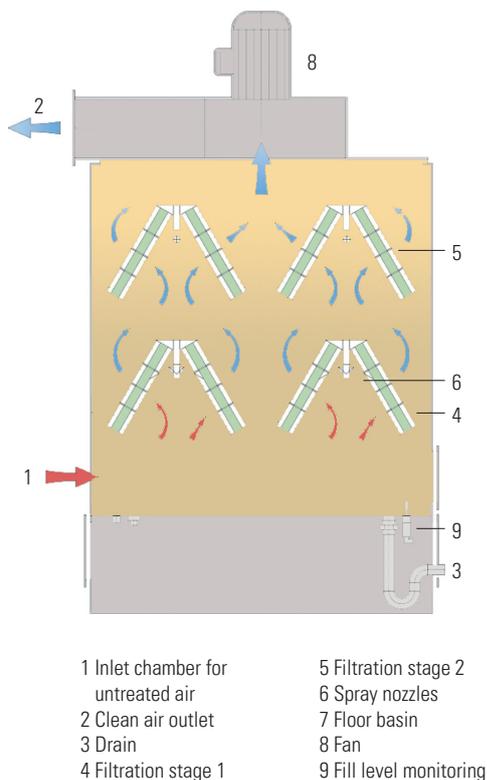
The separation principle

- Multi stage process
- Reusable wire mesh filter elements
- Separation is achieved by a combination of inertia, coalescence, diffusion and screening effect.

Applications

- Cutting processes such as drilling, turning, milling, broaching, honing, grinding
- Shaping processes such as rolling, deep drawing, pressing

Function



Dust extraction of a truck-engine production with a volume flow of 140 000 m³/h

The untreated/contaminated air enters the air inlet chamber (1) where gravitational separation removes larger mist droplets from the air. The incoming air flow is captured in filter stage 1 (4) and is directed on to the second filtration stage (5). Both wire mesh filters are reusable.

The separator is preconfigured for optional automatic rinsing which can be activated to prevent excessive contamination of the filter media. During operation water or coolant is sprayed by nozzles (6) on the surface of the first separation stage (4) to wet the wire mesh and flush away particles. The separated coolant and rinsing agent flow through the first filtration stage (4) onto the slanted floor basin (7) and drain out of the unit through the drainpipe (3) integrated siphon.

Depending on the operating conditions, the separated coolant can be either reused in the machine or be

pumped into a reconditioning unit.

The two filtration stages can be easily inspected by opening the access doors. Filter elements can be removed for cleaning or exchange if necessary.

A top-mounted radial fan (8) or an external fan provides the necessary air flow and vacuum.

After passing through the filtration stages the cleaned air exits the unit via the fan or clean air outlet (2) and can be re-circulated into the workplace or ducted to the outdoors, depending on workplace conditions and clean air regulations (Recirculation or vented air operation).

Depending on applicable noise regulations, installation of an exhaust silencer at the fan outlet might be required.

Filter elements

Reusable wire mesh filter elements.

Automatic cleaning of filter elements

The separators are preconfigured for optional automatic rinsing. The cleaning process can be configured individually to fit the specific application. The cleaning process can be activated with an electro-pneumatic ball valve during operation (short intervals) and after the filter unit has been turned off. Plain water

(in some instances coolant is substituted) serves as the cleaning fluid. Spray nozzles spray the water onto the surface of the filter elements. This type of backwashing prevents excessive contamination of the installed filters. The backwashing process can also be controlled manually in „Manual Operation“ mode.

Disposal

The separated coolant is collected in the floor basin of the unit and is then reintroduced into the coolant circulation of the machine via return pipe or removed for reconditioning.

The return pipe must be vacuum sealed either by using a siphon or by immersing it in the coolant sump by at least 300 millimeters.

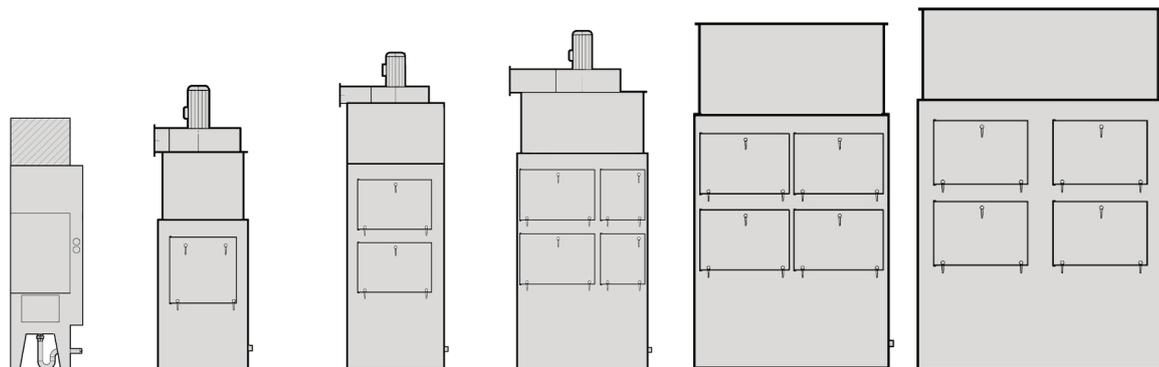
Recirculation of exhaust air

The highly efficient separation of aerosols frequently allows the cleaned air to be re-circulated into the workplace. Higher concentrations of gaseous components present in the cleaned air must be ducted outdoors. As an alternative, an additional cleaning stage (cooling and condensation, or adsorption filter) is possible.



Unit dimensions and technical specifications

ENA-D



	ENA-S	ENA-1-D	ENA-2-D	ENA-3-D	ENA-4-D	ENA-5-D
Floor space (mm)	740 x 740	1 000 x 1 200	1 200 x 1 200	1 600 x 1 600	2 000 x 2 000	2 400 x 2 400
Max. airflow (m ³ /h)	2 000	10 000	15 000	30 000	45 000	60 000

Subject to modification

ENA-S mist collection for individual machining centers

Since the ENA-S purifies the contaminated air so clean with its three-stage filtration (including HEPA-stage) is clean air recirculation into the workplace often possible.



Reusable wire mesh filter elements

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