

ENA: Coolant Mist Collector



Coolant aerosols reliably extracted and filtered



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

The Task

Our coolant mist collectors, ENA, 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 series of models with airflows up to 35,000 cfm (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.

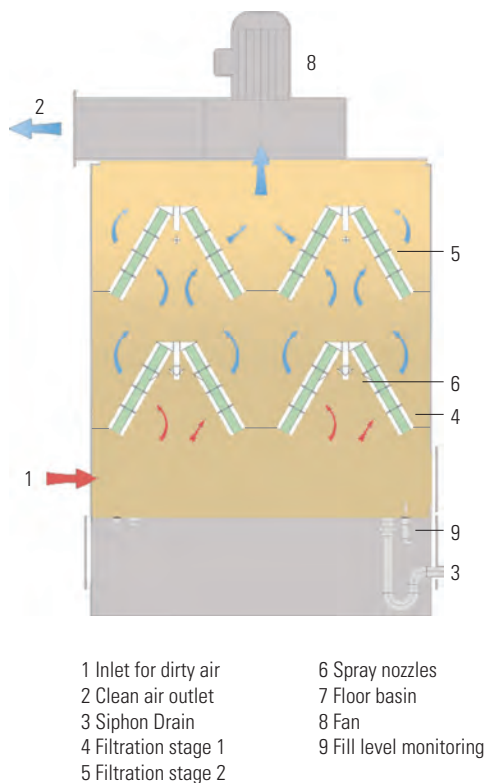
Applications

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



Dust extraction of a truck-engine production with an airflow of 82,000 cfm (140,000 m³/h)

Function



The dirty air enters the air inlet chamber (1) where gravitational separation removes larger mist droplets from the air. The incoming airflow is captured in filter stage one (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 stand-alone fan provides the necessary airflow 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 (Re-circulation 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 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 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 12" (300 mm).

Recirculation of exhaust air

The highly efficient separation of aerosols frequently allows the clean 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.



ENA-S mist collection for individual machining centers

Since the ENA-S purifies contaminated air so efficiently with its three-stage filtration (including HEPA-stage), clean air re-circulation is often possible.

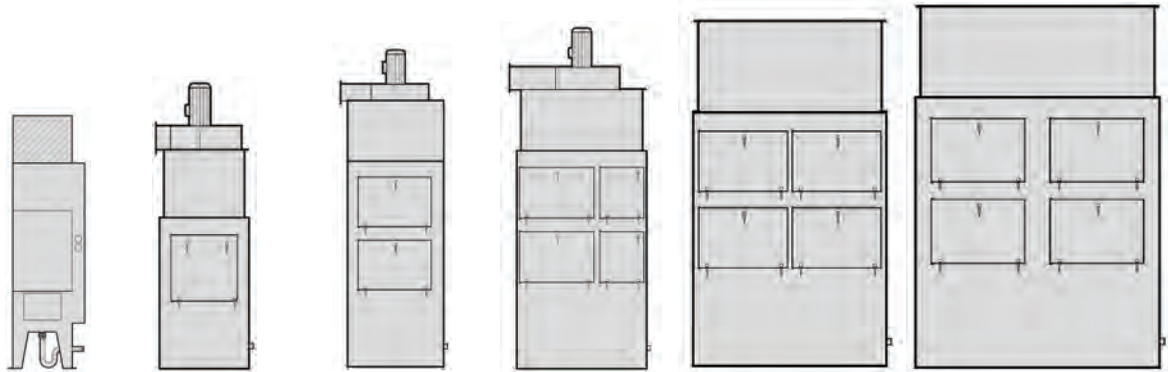


Reusable wire mesh filter elements

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Technical Data



	ENA-S	ENA-1-D	ENA-2-D	ENA-3-D	ENA-4-D	ENA-5-D
Floor space	30" x 30" (740 x 740 mm)	40" x 47" (1,000 x 1,200 mm)	47" x 47" (1,200 x 1,200 mm)	63" x 63" (1,600 x 1,600 mm)	79" x 79" (2,000 x 2,000 mm)	95" x 95" (2,400 x 2,400 mm)
Max. airflow	1,200 cfm (2,000 m ³ /h)	5,900 cfm (10,000 m ³ /h)	8,800 cfm (15,000 m ³ /h)	17,700 cfm (30,000 m ³ /h)	26,500 cfm (45,000 m ³ /h)	35,300 cfm (60,000 m ³ /h)

Subject to application

Accessories

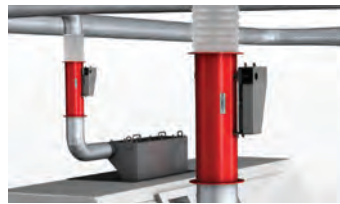
ProBox



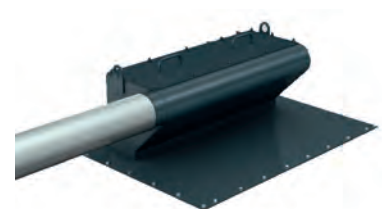
- Solid state flame barrier
- Pre-separation of coolant / oil
- Airflow: max 2,100 cfm

ProFix

- Automatic airflow damper
- Internal airflow balancing
- Adjustable extraction efficiency



ProChip



- Chip separator at machine tools
- Captures mist, not chips
- Airflow: 800-2,000 cfm



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