CM Centrifugal Mist Collector
Mist and smoke generated from screw machines, CNC lathes, bar machines, grinders and machining centers contaminate in-plant air. AER Control Systems’ Centrifugal Mist Collectors eliminate, trap and recover those contaminants right where they start — at the source. Designed to work on a variety of equipment using either petro-based or synthetic coolants, the AER Controls Systems Series Centrifugal Mist Collectors are compact, efficient, economical and ready for direct machine mount. Our mist collectors’ direct machine-mount capability makes installation simple, eliminates unattractive ductwork, reduces fire hazards, prevents cross-contamination of coolants and reduces plant costs. AER Control Systems Mist Collectors work to provide clean, contaminant-free air, so plants can operate and promote cleaner, safer and healthier work environments.

We manufacture AER Control Systems Mist Collectors with all the features that benefit not only your plant’s quality and appearance, but also its morale and productivity.

**Basic units include four stages of filtration.** First, an inexpensive, easy-to-replace first-stage throwaway filter acts as a preventive barrier, removing the majority of the solid particles in the collected mist. The second-stage primary filter is behind the throwaway filter and consists of a special high-efficiency media designed to efficiently coalesce ultra-fine mist particles. The first two stages are housed in the rotating drum assembly. After exiting the drum, air passed through the third-stage filter then exits through the fourth-stage exhaust filter.

**Minimal gap** between the cover and aerodynamic drum inlet minimizes potential bypass and ensures that the maximum amount of contaminant-laden air passes through the drum filters. The perforated drum is heavily reinforced and coated for durability and long life.

**Manufactured with tough 16-guage spun steel** the powder-coated housing withstands rough industrial environments.

**Constructed to make installation and maintenance virtually effortless** units weigh from 74 to 124 lbs. AER Control Systems Mist Collectors are compact and easily machine mounted. Floor-mounted pedestal stands are available if machine mounting is not possible.

**Quiet operation** — standard unit noise levels range from 70 to 76 dBA at 3’. *

**Direct mount capability** saves floor space, simplifies installation, and reduces ducting and the potential spread of fire should ignition occur.

**Energy savings** provide a rapid return of initial investment. Cleaned air returns back to the plant environment, eliminating the need to exhaust air outside. Recycling the indoor air eliminates the need for taking in make-up air, thereby reducing associated heating and cooling costs.

**Meets or exceeds OSHA requirements** so plants comply with tough clean-air standards. The end result: a clean, healthy plant environment with improved morale and productivity.

* Noise levels can vary depending upon the size and nature of the installation area.
Options. What separates us from the rest.

Prefilters

Integrate a prefilter to improve unit performance and reduce maintenance. Prefilters remove larger solid particles that may be suspended in the captured mist. To prevent chips, turnings and a majority of the fines from “soft” metals or grinding swarf from entering and prematurely blocking off the drum filters, choose a high-performance, add-on, modular prefilter. The low-cost, easy-to-replace disposable filter discs can be used in single or multiple stages to tailor individual levels of pre-filtration.

HEPA Post Filters

We understand that every manufacturing plant is different — from what it produces to how it produces it — so we’ve designed not just one mist collector model, but an entire modular line to support the variety of needs in the marketplace. A number of add-on pre- and post-filter modules are available, allowing plants to customize in-plant systems. Modules are easily added and/or modified in the field, providing the ultimate in adaptability.

Oil mist is not the only contaminant produced in machining environments. Smoke is another difficult and typical byproduct of today’s high-speed operations. If you produce both mist and smoke, then our HEPA post filter is the right choice for your air filtration needs. Adding a HEPA filter to our standard unit licenses our mist collector to handle the combination of sub-micronic mist and smoke — a contaminant composition often associated with high-speed or heavy metal removal applications and/or thermal processes such as EDM, oil, quenching, or...
lube oil sump reservoirs. When equipped with a HEPA filter, the particulate efficiency rating increases from 98% efficiency at one micron (standard model rating) to 99.97% efficiency at 0.3 microns. (Higher efficiencies are available.) Our HEPA filter assemblies are factory-installed or retrofitted in the field.

**Carbon & Gas Vapor Filters**

In addition to mist and smoke, some operations may generate gas/vapors or “odors" that require control with filters such as carbon. A variety of gas/vapor filters and/or filter modules are available for control of these contaminants. On most typical applications, our standard, high-capacity, refillable carbon filter module can be used. High-quality, high-capacity coconut shell carbon is standard, but alternate media such as treated or reactive carbons, potassium permanganate/activated alumina pellets, zeolite or combinations of all three (CPZ) can be provided for more difficult applications. The standard carbon modules are available for use with the basic CM unit (Models CMC) or for units with HEPA post filters (Models CMHC), or can be field-retrofitted.

**Floor Mounted Pedestals & Other Options**

For applications on machines with limited access or mounting space, or where direct machine mounting is not advisable, optional Floor Mounted Pedestal stands are available. Standard Pedestals have predrilled 12-square-inch top and bottom mount/base plates and are available in 18" or 6' 6" heights (other heights available). Other available CM options include machine-specific mounting brackets, hoods, non-sparking drums, heaters, special motors, spray-wash nozzles and specialized inlet and outlet fittings.
Performance. It's in the force.

We've integrated the law of centrifugal force into the design of our mist collectors.

How it works

During operation the perforated drum/radial blade fan assembly spins at a high speed, providing air movement as well as filtration. Mist-laden air enters the Centrifugal Mist Collector through a flexible hose or air duct. As air passes through the media, coalescence occurs and sub-micron mist particles are trapped and retained until they have grown to droplet size. The droplets are thrown free of the perforated drum to the inner wall of the casing by centrifugal force. High-velocity air drives the liquids along the inner wall of the collector, forcing them into the circumferential slot of the primary drain chamber. The higher air pressure in the chamber force-drains liquids from the system for reuse or disposal while clean air is exhausted or returned to the plant environment.
### Aer Control Systems Centrifugal Mist Collector Specifications

<table>
<thead>
<tr>
<th>MODEL</th>
<th>NOMINAL CAPACITY (CFM)**</th>
<th>INLETS (G.D.)</th>
<th>MOTOR CHARACTERISTICS</th>
<th>WEIGHT (LBS.)</th>
<th>LEVEL (GPM)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CM-100</td>
<td>100</td>
<td>3</td>
<td>1/2 HP, 3450 RPM</td>
<td>74</td>
<td>70</td>
</tr>
<tr>
<td>CM-200</td>
<td>200</td>
<td>3</td>
<td>230/460 VAC, 60 Hz 3-phase, TEFC 190/380 VAC, 3-phase 50 Hz*</td>
<td>74</td>
<td>70</td>
</tr>
<tr>
<td>CM-300</td>
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<td>3</td>
<td>1 HP, 3450 RPM</td>
<td>95</td>
<td>72</td>
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<tr>
<td>CM-500</td>
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<td>5</td>
<td>230/460 VAC, 60 Hz 3-phase, TEFC 190/380 VAC, 3-phase 50 Hz*</td>
<td>95</td>
<td>72</td>
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<tr>
<td>CM-700</td>
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<td>3 HP, 3450 RPM</td>
<td>120</td>
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<tr>
<td>CM-900</td>
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<td>5</td>
<td>230/460 VAC, 60 Hz 3-phase, TEFC 190/380 VAC, 3-phase 50 Hz*</td>
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<td>74</td>
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<tr>
<td>CM-1200</td>
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<td>3 HP, 3450 RPM</td>
<td>125</td>
<td>76</td>
</tr>
</tbody>
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*Reduces nominal CFM by 5% @ 50 Hz; consult Application Engineer for fan curves.

** at 1.7" negative static pressure (in H2O)

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### Models CM-100 and CM-200

![Diagram of CM-100 and CM-200 models](image1)

### Models CM-300 and CM-500

![Diagram of CM-300 and CM-500 models](image2)

### Models CM-700, CM-900 and CM-1200

![Diagram of CM-700, CM-900 and CM-1200 models](image3)