

Metal Fabricator, Specializing in CNC Machining

Focus:

Contract manufacturing machine shop specializing in structures and mechanics for aerospace optics, and semiconductor manufacturing equipment. Primarily working with aluminum, stainless steel, and specialty alloys.

Challenge:

Excessive coolant mist in the shop atmosphere. This customer wants to improve the air quality for employees health and comfort, protect company equipment, and overall cleanliness.

Solution:

After significant testing, SmogHog® SHM-08C Advanced Media Mist Collectors utilizing PEACH® saturated depth coalescing technology were installed on each heavy mist producing machine.

Impact:

Replacing the older mist collectors with tested, high-quality SmogHog machines has reduced the airborne contaminants generated by coolant and oils used during machining and metalworking processes. The employees are breathing clean air, manufacturing equipment is running better, and the overall shop is cleaner providing an improved work environment.



Project Name: Test Leading Mist Collectors for a Solution
Location: Northwestern United States

Summary

Customer metal fabrication, specializing in CNC precision machining, metal fabrication, mechanics for aerospace optics, and semiconductor manufacturing equipment. The business operates in over 90,000 square feet, across multiple facilities.

Challenge

The customer had outdated equipment that was unable to keep up with the demands of their business. The team felt the mist collection equipment was inadequate to support the work and the projects expected in the future.

Multiple industry-leading brands of mist collectors were tested, but with unsatisfactory results. Next, the team planned an engineering study. The customer wanted to be certain the

new equipment solution resolved the issues, so no better place to start than to test. They contacted their Parker Distributor to discuss challenges.

After learning more about the issues being faced and analyzing the detailed machine information provided by this metal fabricator, Parker and the Distributor made a recommendation on the model/CFM capacity. The advanced control option was also selected by the customer to enable tuning of fan speed for the leanest possible operation, as well as placing the controls at eye level for the operators instead of being out of sight and out of mind.



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Challenge (continued)

In the engineering study, the SmogHog® (with PEACH® media) and an industry competitor oil mist collector were measured on percent of particles captured, including particle sizes from 0.5µm to 10.0µm.

After testing the particle and humidity discharge from both mist collectors, the SmogHog PEACH primary filter was far and away more effective in all categories of comparison and therefore selected for implementation. In the testing for efficiency, SmogHog and the PEACH media technology beat the competition by 40 percentage points.

Solution

In August of 2021, following the engineering study, additional SmogHog SHM-08C Advanced Media Mist Collectors from Parker were ordered and installed on each heavy mist-producing machine. Depending on the final results of the installations, (machines need to run for a while before final evaluations) other machines in the shop may be outfitted with SmogHog mist collectors.

PEACH® Saturated Depth Filter Technology



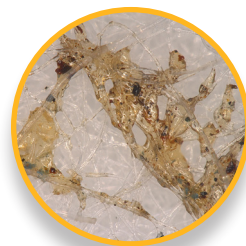
PEACH Saturated Depth Coalescing™ media provides an open 3-D depth matrix structure which allows liquids to saturate the media depth and grow to fullest potential then drain with gravity when the droplet is ready, all while maintaining a low differential pressure.

The SHM PEACH media is a 100% proprietary synthetic media engineered specifically for capturing and draining oil mist and coolant contaminants. The multi-layered media features a special, thermally bonded gradient density fiber structure so the media stays strong, but open during operation for optimized performance. The benefits of PEACH media include:

high efficiency | extended service life | low pressure drop over extended periods of time

How PEACH Works

The unique fiber structure of PEACH media separates the liquid droplets from the airstream in three distinct manners. Unlike depth or pleated filters, PEACH media technology provides multiple airflow paths, increasing the virtual filtration area of the media, thus extending the opportunity for contaminants to be removed.



Liquid droplets coalesced within the PEACH fiber matrix

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Patent Pending Inner Filter Tube

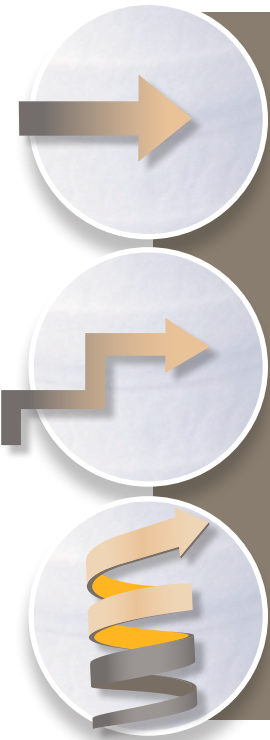
Filter life is extended with the inner filter tube feature. This patent pending design increases filter capacity and lowers pressure drop resulting in extended filter life and lower cost of ownership.



Drainage

As suspended liquids collect and coalesce on the fiber structure, the droplet size grows and gravity drains the contaminants from the airstream and out of the filter

Three Airflow Paths Remove Over 99% of Contaminants



- Radial**
 Air passes directly through the thickness of the media impacting the fiber structure removing contaminant
- Axial**
 Media structure forces a large percentage of airflow to take a stair-step path improving particle removal
- Helical**
 The wrapped structure of the fiber matrix creates a corkscrew air pattern that increases dwell time and resulting particle capture

Impact

Replacing the older machines with tested, high-quality SmogHog machines has reduced the airborne contaminants generated by coolant and oils used during machining and metalworking processes. The customers employees are breathing clean air, manufacturing equipment is running better, and the overall shop is cleaner providing an improved work environment.

EFFICIENCY

SmogHog® beat the competition by 40%.