

Casebooks

Coolant mist removal

Remmele Engineering performs micromachining operations for high technology applications. But the successful manufacture of sub-millimeter, ultra-precision components requires virtually vibration-free equipment to maintain consistent quality to extremely tight tolerances.

During component manufacture, Remmele uses both mineral oil and synthetic water-based coolants, both of which create mists and smoke. In addition, the new approach of applying coolant in small diameter, high-pressure streams creates even finer mists and more smoke. Remmele had tried using centrifugal mist collectors but was dissatisfied with the vibration, noise, and inefficiency of the units. These collectors be-



The MistBuster 500 contains a motorized impeller, an electrostatic precipitation cell, 4-in. impingers, an infinitely variable-speed controller, and more.

came unbalanced with accumulated mist on their impellers and created vibrations that transferred to the CNC machine tools.

So Remmele contacted Air Quality Engineering, Brooklyn Park, Minn., and purchased a Smoke-



Measuring 25×13½×18¾ in., the MistBuster 500 mounts on machine tools to provide vibration-free mist and smoke removal.

master Model F33 electronic air cleaner. This unit, which was remotely mounted and ducted to three machine tools, captured fine mist and smoke well. However, Remmele found the ductwork between the unit and machine tools to be unsightly in its spotless 60,000-ft² machining facility.

So Air Quality Engineering designed a machine-tool-mounted electronic unit, the MistBuster 500, specifically for Remmele.

The MistBuster 500 prototype unit incorporated 4 in. of metal mesh impingers and a small electrostatic cell. It was tested at Remmele's facility for two months where it completely eliminated fine mist and smoke without affecting micromachining operations.

The unit's variable speed controller lets Remmele technicians adjust the negative pressure within the machine tool enclosure, which saves energy, reduces maintenance, and lowers sound levels. Additionally, the MistBuster operates on less than 230 W of power and has no media filters to replace.

Remmele now has 16 MistBuster 500 units at its Plant 30. Most of these air cleaners run 24 hr/day, 7 days/wk. Because these units are virtually self-cleaning, Remmele anticipates that it will only need to service the MistBusters on an annual basis.

AIR QUALITY ENGINEERING, INC.
800-328-0787



MistBuster 500 Ducted to Vertical Machining Center.