

Aeroacoustic Cleaner Removes Dust From Delicate Surfaces

Competitive Advantages

- ☑ Cleaning device removes dust particles without touching delicate surfaces.
- ☑ Minimizes release of dust into surrounding air.
- ☑ Multiple configuration options, including portable and installed devices.
- ☑ Useful for a wide range of industrial and consumer applications.

An energy-efficient dust removal device combines acoustic levitation with aerodynamic flow to remove surface particles. Unlike brush-equipped vacuums, it does not touch the surface or spray dust particles into the environment.

Multiple Configurations

With potential configurations similar to traditional vacuums – including portable, robotic, push-type, and installed devices – the cleaner applies acoustic radiation to break the adhesive bonds between dust and surface, causing the dust particles to bounce. Simultaneously, it applies a bounded vortex to the surface, blowing air along the periphery and applying suction in the center to draw in and trap the dust.

Protects Delicate Surfaces

The cleaner is especially beneficial when used on delicate surfaces that are prone to abrasion and must be kept dust-free. These include optical and electronic components in industrial applications, as well as consumer products such as wood floors. By avoiding contact, the duster maintains the integrity of the surface and prevents wear.

Minimizes Dust Redeposition

Because the cleaner does not disperse dust particles into the environment, it helps to prevent redeposition and may reduce the frequency of cleaning required.

Next Steps

After detailed studies of fluid flow and particle transport are completed, integrated prototype devices will be built and tested.

Commercialization

Anticipated licensees include commercial electronics and optics manufacturers, as well as consumer vacuum cleaner and other cleaning device manufacturers.

Patent/Licensing Status

Patent pending. Exclusive rights available.

Learn More

Complete description
www.uvminnovations.com/graphics/PDF/duster1.pdf

Illustrations
www.uvminnovations.com/graphics/PDF/duster2.pdf

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