



NEWS RELEASE

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FOR IMMEDIATE RELEASE:

Sonobond's ultrasonic bonders provide filter manufacturers with increased stability, reliability in the production of HEPA rated filters

WEST CHESTER, PA (February 25, 2004) Sonobond Ultrasonics announced today that filter manufacturers are utilizing a variety of ultrasonic bonding machines for assembly of filter media. The unique advantages that ultrasonic technology offers is especially useful for manufacturers of HEPA rated products.



HEPA (High Efficiency Particulate Air) filter requirements specify that particle sizes greater than .034 microns must not pass through the filter to receive the HEPA designation. When a manufacturer of filter cartridges for use in bagless vacuum cleaners needed a precise, reliable bonding method to assemble cylindrical filters from pleated HEPA filter media, they chose Sonobond's SureWeld 20kHz ultrasonic plunge welder. According to Janet Devine, president of Sonobond, the choice of assembly method utilized by manufacturers of

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HEPA rated filters is critical because the filter, once assembled, must be tested to ensure it still meets HEPA requirements.

Overlapping method proved unacceptable

“Our customer’s previous assembly method, which involved an overlapping technique, resulted in filters that sometimes leaked and therefore failed to meet HEPA requirements,” says Devine. “Then they switched their assembly method to ultrasonics, using Sonobond’s SureWeld machines. The equipment perfectly bonds and trims the edges of the pleated filter media in one step, creating a 10-inch filter tube, which, after testing, still maintains the HEPA rating.” The entire process is completed in a few seconds, which has resulted in increased productivity and product reliability for the manufacturer.

With their superior control and repeatable accuracy, Sonobond’s SureWeld plunge welders provide filter manufacturers with a proven assembly method that is having a positive impact on quality control. The SureWeld bonders feature rectangular support columns which eliminate deflection, keeping the filter unit in perfect alignment during the assembly process. And Sonobond’s engineers can design custom welding heads, or horns, for specific applications.

Continuous bonding equipment is also used for filter assembly

Filter manufacturers are also using Sonobond’s SeamMaster line of continuous bonding machines for certain assembly applications. Devine explains, “The SeamMaster, which is configured like a traditional sewing machine, runs at speeds of up to 60 feet per minute, depending on the specific application. Some of our filtration customers prefer the continuous ultrasonic bonding mode, rather than line welding.”

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Advantages of continuous bonding are similar to ultrasonic plunge welding. Both types of equipment cut and seal in one pass, without the use of consumables, such as glue or thread. Custom tooling, known as pattern wheels, is also available for the SeamMaster units, in addition to the 500+ standard pattern wheels designed for slitting, seaming, sealing, embossing and tacking applications. Another advantage, adds Devine, “is that the SeamMaster cuts cleanly, without leaving frayed or beaded edges, and operating the SeamMaster requires very little training over traditional sewing machines.”

How ultrasonics works

Sonobond’s welding equipment directs high-frequency vibrations through the horn, which causes a rapid heat buildup at the material contact point. Says Devine, "Nonwoven filter media is ideal for ultrasonic bonding, because of its high synthetic content. The ultrasonic energy causes the synthetic material to melt and fuse, creating a strong bond. The process is providing filter manufacturers with a specialized system that runs with speed and precision, resulting in improved productivity and efficiency.

Sonobond Ultrasonics is recognized worldwide as a leader in ultrasonic technology. Sonobond’s products bond textile, metals and plastics in a variety of industries, including automotive, HVAC, filtration, medical, appliances, packaging, electronic and electrical.

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