

AAF International® Improves Filter Assembly with Sonobond Ultrasonic Bonders

SeamMaster® and SureWeld™ systems helped AAF increase productivity, improve weld integrity and replace inconsistent legacy assembly methods across multiple filter applications.



American Air Filter (AAF) International® manufactures filtration products for demanding applications, including HVAC, dust collection, nuclear and bio-chemical environments.

» The Challenge

AAF was seeking a bonding solution that could support different filter formats, maintain bond quality and keep production costs under control. Traditional bonding methods created limitations. Radio frequency welding was inconsistent, consumed more energy and became ineffective after AAF upgraded its filter media. Sewing also presented drawbacks, especially for bag-style filters, because needle holes could weaken seal integrity and compromise performance.

» The Solution

Sonobond's technology uses high-frequency vibrations to generate localized heat at the bond point, melting and fusing the material without thread or adhesives. Sonobond provided AAF with ultrasonic bonding systems tailored to multiple filter applications.

- For ring panel filters, Sonobond's SeamMaster® Ultrasonic Bonding Machine bonds two layers of filter media around a metal frame, creating a continuous fused seal. The filter center is then spot welded with Sonobond's 20 kHz SureWeld™ plunge welder.
- For commercial bag filters, the SeamMaster cuts filter pockets to size and seals the material on three sides in one efficient process. This replaced sewing with a faster method that produces a continuous seal without puncturing the media.
- For cube filters, Sonobond engineers designed a custom two-headed SureWeld plunge welder to bond a wire ring around the perimeter of the five-sided cube. This specialized configuration gave AAF a one-step process that matched the size and production requirements of the part.

» The Results

With Sonobond's ultrasonic equipment, AAF improved both manufacturing performance and product quality across a variety of filter assemblies. The company achieved faster assembly for bag and cube filters, along with improved weld integrity and more efficient handling of upgraded filter media. The custom solutions Sonobond provided also enabled AAF to standardize ultrasonic technology across multiple product lines.

» Why Sonobond?

With proven expertise in bonding nonwovens, the ability to customize systems for unique production requirements and a strong track record across industrial markets, Sonobond helped AAF replace outdated methods with a faster, more reliable manufacturing approach.



Looking to improve filter assembly performance?

Contact Sonobond to discuss your application and discover the right ultrasonic bonding solution for your process.