



NEWS RELEASE

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**Contact: Janet Devine, President
Sonobond Ultrasonics
610-696-4710**

**Tim D'Annunzio, President
Paraclete Armor & Equipment
910-865-2425**

Ultrasonic Assembly is Key Factor in Armored Vest Effectiveness

WEST CHESTER, Pennsylvania
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The phrase “Failure is not an option” may have been coined by a NASA executive, but it also represents the feelings of those who supply armored vests and accessories for the military and law enforcement. Since a product failure can result in a life or death situation, there is no room for error in the manufacture of bullet-proof products. That’s why Paraclete Armor & Equipment of St. Paul’s North Carolina has replaced its sewing assembly method with ultrasonic bonding equipment from Sonobond Ultrasonics.

Moisture affects ballistic stopping capability

According to Tim D'Annunzio, President of Paraclete, bullet-proof materials, such as Spectra-Shield and Kevlar, lose their effectiveness



Sonobond's Ultrasonic Bonding Equipment – Best Choice for Armored Vest Assembly

when they become wet. “We protect the core of our armored vests with an outer layer of coated nylon material designed to keep moisture out.” A moisture-proof seam, which is a key element in the product’s quality and performance, is achieved with Sonobond’s SeamMaster™ continuous bonding equipment. The SeamMaster uses ultrasonic energy to cut and actually seal synthetic materials in one pass, producing a superior, water-proof seam, as compared to stitching, heat sealing, adhesive machines or stationary sonic methods.

(more...)

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Paraclete uses Sonobond's SeamMaster™ to assemble body armor –page 2

Synthetic fabrics ideally suited for ultrasonic assembly

According to Janet Devine, President of Sonobond Ultrasonics, the type of nylon that Paraclete uses for the outer layer of its bullet-proof vests is ideally suited for ultrasonic bonding. The SeamMaster™ channels high-frequency vibrations to the synthetic material as it passes between the horn and the rotating pattern wheel, creating a rapid heat buildup at the material contact point. Says Devine, "The ultrasonic energy causes the material to melt and fuse. The result is a strong bond, which is impervious to moisture."

Sewing was unacceptable

Paraclete had previously used a sewing method to assemble its products. "Sewing proved to be unacceptable because the needle holes allowed moisture and perspiration to penetrate the inner core of the garment," says D'Annunzio. Ultrasonic assembly with Sonobond's equipment has helped Paraclete Armor insure that its products meet the exacting quality standards that their customers demand.

Custom equipment and tooling aids assembly process

Paraclete uses Sonobond's SeamMaster 86 model, a specialized unit designed with a higher clearance to facilitate manual feeding by the operator.

"Assembly of a product with tight tolerances, such as Paraclete's tactical gear, is best achieved with the SeamMaster 86," says Devine. "Our engineers designed a larger pattern wheel, specifically for Paraclete's application, that allows both hands to be close to the wheel during the assembly process." The SeamMaster bonders run problem-free in continuous operation, at speeds up to 4 times faster than traditional sewing machines.

Sonobond's Leadership

Sonobond Ultrasonics is a worldwide leader in the application of ultrasonic bonding technology. Sonobond's products bond textiles, metals, plastics and nonwovens in a variety of industries, including automotive, appliance, HVAC, apparel, aerospace, medical, electronic and electrical.

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