



NEWS RELEASE

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FOR IMMEDIATE RELEASE

Sonobond's Comprehensive Line of Ultrasonic Metal Welding Equipment is Designed to Satisfy Applications Across a Wide Spectrum of Industries

The unique, patented "Wedge-Reed" bonding system makes Sonobond technology ideal for producing dependable, solid-state metallurgical bonds.

WEST CHESTER, Pennsylvania, September 30, 2009—Sonobond Ultrasonics announced today that it now offers a total of 10 ultrasonic metal welding units. These units have been engineered to satisfy the needs of manufacturers in a broad variety of fields. According to Melissa Alleman, Sonobond's Vice President, "We are firmly committed to maintaining our strong technological leadership by providing outstanding ultrasonic metal welding equipment. With this in mind, Sonobond has continued to expand its line of metal welders. Our customers know they can rely on our units to produce reliable solid-state metallurgical bonds of non-ferrous similar and dissimilar metals. These welds are accomplished *without* heat, current, or consumables.

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Page 2 – Ultrasonic Metal Welders Suitable for Many Applications

Manufacturers also like the fact that our units come with quick-change steel taper lock tips that are capable of performing *up to 100,000 welds* before replacement.”

Technology for Many Different Applications

Sonobond units are utilized for a wide range of applications. For example,



Sonobond equipment is used to weld stranded wire-to-wire and wire-to-terminal for applications such as electrical wire harnesses and bus bars. This metal welding technology is also used to weld the terminals of lithium-ion batteries, foil-

wound capacitors, thin aluminum or copper foil, and electrical contacts. It plays an important part in the manufacture of fuses/circuit breakers, ignition modules, starter motors, and photovoltaic panels. It can also be used to close HVAC tubing, replacing crimp and solder methods.

According to Vice President Alleman, “Here at Sonobond, we are continually identifying additional applications for ultrasonic technology. We are also dedicated to delivering practical, *customized* metal welding solutions to our customers. And we take great pride in the fact that our quality-engineered technology is cost-effective, environmentally-friendly, and requires only minimal training. In addition, we back this technology with the kind of solid technical support and good service that few companies provide today.”

Unique Bonding System Sets Sonobond Apart

All Sonobond ultrasonic spot welders utilize the patented “Wedge-Reed”

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Page 3 – Ultrasonic Metal Welders Suitable for Many Applications

bonding system. This unique system has several features to maximize welding reliability and effectiveness. For example, the Wedge-Reed system produces *precise welds* by combining high vibratory force with low amplitude coupling. It *assures dependability* by utilizing shear mode vibration that is parallel to the welding surface. And it *eliminates bending stress* by positioning the line of force directly over the welding surface. These features give Sonobond units significant advantages over other ultrasonic metal welders, including the ability to ultrasonically weld tinned materials.

Sonobond's Newest Ultrasonic Metal Welders

Sonobond introduced two ultrasonic metal welders this year. They are the Dual Head SpliceRite™ and the Dual Head Spot Welder.

The Dual Head SpliceRite™ can weld wire bundles with cross-sectional areas of up to 100 square millimeters. No other ultrasonic welder can equal this capacity *in a single pulse*. This makes it especially suitable for applications involving heavy-duty cables used in cars, trucks, and industrial machinery. With



appropriate tooling, the Dual Head Spot Welder can weld non-ferrous sheet metal. In addition, it can weld up to 80 layers of foils, making it ideal for advanced battery and super capacitor applications.

Both the Dual Head SpliceRite™ and the Dual Head Spot Welder use Sonobond's 3,500 watt power supply and can accommodate lightly tinned or

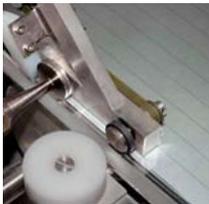
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Page 4 – Ultrasonic Metal Welders Suitable for Many Applications

oxidized wires. The microprocessor controller—which is standard for both units—can weld by height or time. It can also recall up to 250 weld protocols.

Sonobond Equipment for Solar Panel Production

Sonobond Ultrasonics has responded to concerns about global warming and high energy costs with its Model MS-5010PV Ultrasonic Photovoltaic (PV) Modular System. This system is used in the assembly of the solar cells that constitute solar panels. There is no melting, excessive heat, fluxes, filler metals, tapes, or other consumables. This equipment is ideal for welding aluminum



strips to the metallized glass on PV modules. The resulting

interconnects between the PV cells create an array with

excellent conductivity. The welding system's power supply—

with automatic frequency control—and a welding head with a rotatable disk tip are suitable for integration into production line systems for PV cell manufacturing.

Ultrasonic Welding of Large Metal Parts

Sonobond's WeldMaster™ C-Frame I and C-Frame II Spot Welders effectively accommodate large metal parts, such as those used in the automotive industry. With outputs of 2,500 watts of power, these units can weld non-ferrous similar and dissimilar metal assemblies—including copper to aluminum. At the same time, they virtually eliminate the problem of tips sticking to aluminum parts. The C-Frame I has a 14-inch throat depth and usually completes the weld operation in less than 1.5 seconds. The C-Frame II has an 18-inch throat depth.

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Page 5 – Ultrasonic Metal Welders Suitable for Many Applications

This unit is available with a single or a double head, which further expands the thickness range of weldable materials. The C-Frame welders can be equipped for use on large industrial robots.

SonoWeld® 1600 Digital Metal Spot Welder

The SonoWeld® can perform spot welds—including wire-to-terminal welding—all in a single pulse. The system welds multiple layers and/or delicate foils to tabs or terminals for lithium-ion and NiMH battery assembly. The SonoWeld® series is ideal for electrical bus bar fabrication and for spot welding aluminum up to 0.080" (2mm) thick or copper up to 0.064" (1.6mm) thick. It is also used for welding stranded wire to brass or copper terminals, including multi-connection terminals. The SonoWeld® 1600 is available with power outputs of 1,500 or 2,500 watts; permits storage and recall of over 250 weld protocols; and features automatic frequency control and overload protection. In addition, there is recall and setup of weld parameters to control the weld cycle by time, total energy, or final weld thickness.

Ultrasonic Welding of Wire Bundles

Sonobond's SpliceRite™ Ultrasonic Wire Splicer creates a true metallurgical bond while ultrasonically splicing wire bundles, even those that are



heavily oxidized. It does this without melting the wires or producing arcs, sparks, or fumes. In addition, the SpliceRite™ eliminates the insulation burnback, cooling

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Page 6 – Ultrasonic Metal Welders Suitable for Many Applications

water waste, and high-energy usage associated with resistance welding, and it does this while creating welds that have the lowest possible voltage drop. The unit's microprocessor controller welds by height, energy or time, and can recall up to 250 weld protocols. Both 1,500 and 2,500 watt power supplies are available.

MS-5010B Ultrasonic Foil Splicer™

This Sonobond unit is the fastest and cleanest way to join thin aluminum and copper foils up to 0.004" (0.1mm) thick and up to 48" wide. The system consists of a power unit with a solid-state frequency converter, a welding head, and a rotating disk tip which traverses the width of the foil at speeds up to 15 feet per minute. The MS-5010B seams and splices faster and cleaner than any other method, earning it a place in practically all U.S. foil mills.

The Weldmaster™ MH-1545 for Effective Spot Welding

This unit is the industry's most powerful ultrasonic spot welder. It delivers a full 4,500 watts of output power for welding a variety of metal assemblies up to 0.100" thick. The Weldmaster™ creates a welded joint that is often *stronger* than the parent metals. Although rates will vary according to the thickness and type of materials being joined, most welds are completed in less than 1.5 seconds. This energy-efficient unit can be easily incorporated into automated assembly equipment.

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Page 7 – Ultrasonic Metal Welders Suitable for Many Applications

The Sonobond Tube Terminator™

It takes only seconds for this portable, hand-guided ultrasonic tube closure unit—weighing less than 30 pounds—to precisely crimp and ultrasonically seal copper and aluminum tubing. This one-step process creates quick, airtight seals *without brazing*. It also provides a cost-effective assembly method that can save money on both labor and consumables. The Sonobond Tube Terminator™ effectively seals tubes that have been charged with coolant, fluids, and gases. As a result, it is ideal for sealing instrument tubes, as well as for refrigeration and air-conditioning applications. The unit is also suitable for use in various spot welding applications.

Sonobond: A Leader in Ultrasonic Technology

Sonobond is a worldwide leader in the application of ultrasonic welding and bonding technology. In 1960, the company—then known as Aeroprojects—received the first patent ever awarded for ultrasonic metal welding. Over the intervening 49 years, Sonobond has earned an outstanding reputation for its pioneering work and quality-engineered products. Today, the company manufactures a complete line of ultrasonic welding and bonding equipment for a wide variety of customers in the HVAC, automotive, electrical, aerospace, body armor, filtration, medical, and apparel industries. Sonobond's engineers and sales personnel work closely with customers to find the optimal solution for each company's requirements. They are also committed to providing exceptional

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Page 8 – Ultrasonic Metal Welders Suitable for Many Applications

technical support and superior service before, during, and after installation.

Additional Information

For more information about Sonobond's line of ultrasonic metal welding equipment—as well as to learn about the company's free, no obligation Ultrasonic Welding Viability Test—visit the Sonobond website at www.SonobondUltrasonics.com or call 800-323-1269. You can also contact Sonobond's vice president, Melissa Alleman, at MAlleman@SonobondUltrasonics.com.

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Photos and captions

[Photo showing “fan” of wires to terminal]

The SonoWeld® 1600 from Sonobond Ultrasonics produces wire-to-terminal welds for automotive wire harnesses and other electrical systems.

[Photo showing battery assembly with copper foil]

Sonobond's Dual Head Spot Welder, with appropriate tooling, can weld up to 80 layers of foils as used for advanced battery and super capacitor applications.

[Photo of solar cell assembly—PV tip over panel]

The Photovoltaic (PV) Modular System from Sonobond Ultrasonics is ideal for welding aluminum strips to metallized glass on PV modules. The resulting interconnects between the PV cells create an array with excellent conductivity.

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Page 9 – Ultrasonic Metal Welders Suitable for Many Applications

[Wire-to-wire photo]

The Sonobond SpliceRite™ Ultrasonic Wire Splicer creates reliable, low-resistance electrical connections. It produces a true solid-state metallurgical bond *without* melting wires or producing arcs, sparks, or fumes.