



ELECTRONIC MFG. SERVICES (EMS)

Sonobond: Eco-Friendly Assembly for Alternative Energy Storage

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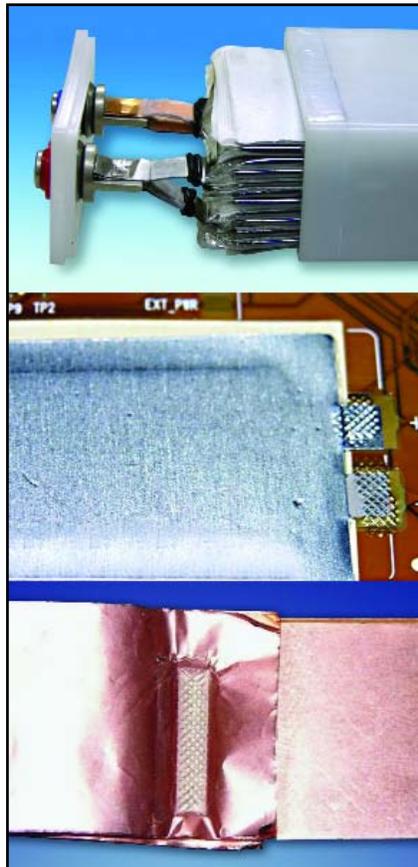
Increased demand for affordable and efficient battery storage, as well as for rechargeable batteries, has stimulated manufacturers' interest in reliable, eco-friendly, high-conductivity ultrasonic assembly methods.

A growing, worldwide need for batteries for renewable energy is allowing Sonobond to provide solutions for the manufacturers developing these innovative storage systems.

Currently, wind and solar account for about 6 percent of the electrical power generation in the U.S. But, as reliance on alternative sources of energy increases, batteries will become essential as backup, providing power when there is no wind or sun. In fact, some battery manufacturers are developing new formats for home and utility-sized energy storage systems that could eventually make wind and solar more consistent power resources. And, some battery manufacturers hoping to commercialize new types of rechargeable batteries are employing Sonobond's ultrasonic assembly technology. These new batteries may eventually provide backup power, as well as grid-scale distributive storage to maintain peak power.

The company continues to provide welding units to manufacturers seeking environmentally-friendly methods of assembling the existing lithium ion and nickel-metal hydride (NiMH) batteries used in such applications as electric and hybrid automobiles, medical tech-

nology, military systems, and telecommunications.



Encased battery, battery pouch and copper foil to tab.

Ensuring Reliable Welds

The company's ultrasonic metal spot welders require no external heat, current, fluxes or fillers and produce no arcs, sparks or fumes. Instead, the welders create durable bonds by employing a patented wedge-reed ultrasonic bonding system that combines high vibratory force and low-amplitude coupling. Using shear mode vibration parallel to the welding surface — while the line of force is directly over the parts to be welded — achieves precise, solid-state and highly conductive welds. The ultrasonic assembly systems can weld most oxidized and tinned metals in one pulse without pre-cleaning.

Sonobond offers two ultrasonic spot welder models that weld multiple layers of foils to tabs or terminals, accommodate battery pouch assembly and HV termination welding. The SonoWeld® 1600 and Dual Head Spot (DHS) welders handle foils as thin as 7 μm . Also, the Dual Head Spot welder is the first ultrasonic welder that can join up to 100 layers of copper or aluminum foil without tearing in one pulse. The units deliver outputs of 1,500, 2,500 and 3,500W.

Both models have digital displays that allow weld control to be selected by time, energy or distance. Each unit has a power supply with a built-in micro-processor containing automatic frequency control, overload protection and stor-

age recall of up to 250 protocols.

The SonoWeld 1600 and Dual Head Spot welders have heat-treated tool steel taper lock tips that can perform up to 30,000 welds before redressing is required, and as many as

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100,000 welds before being replaced. As with all Sonobond equipment, the spot welders require only minimal training.

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Ultrasonic Viability Test

To assist battery manufacturers in determining the benefits of ultrasonic welding for their particular applications, Sonobond offers a free ultrasonic welding viability test. Using materials supplied by the manufacturer, the company produces no-cost, no-obligation sample welds. If Sonobond equipment is implemented in the customer's production process, service and technical support are provided before, during and after installation.

For 56 years, innovation and performance have marked Sonobond's ultrasonic welding technology. Founded in 1960, Sonobond (formerly AeroProjects) earned the first patent for ultrasonic metal welding. Since then, the company has received more than 150 additional patents for metal welders and custom-engineered ultrasonic bonders of all types.

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