

Dual Head Ultrasonic Metal Spot Welder

This unit is ideal for welding automotive aluminum up to 3mm thick and for welding up to 80 layers of foil as used in battery and super capacitor applications. It confidently welds even lightly tinned or oxidized wires, as well as non-ferrous sheet metal, in a single pulse.

General Description

The Dual Head Metal Spot Welder features two ultrasonic welding heads, one on each side of the welding area. The unit creates ultra-reliable, solid-state metallurgical bonds with high conductivity. These welds are produced in a single pulse without arcs, sparks, or fumes and without melting at the weldment.

This microprocessor-controlled, 3,500-watt, double-headed unit was designed to extend the weldable thickness capability for automotive aluminum to 3 mm thick materials. It achieved this and also reduced both the time to weld and the tip sticking of the thinner automotive aluminum welds.

The unit is particularly successful when welding multiple layers of foil for the battery and capacitor industry. Up to 80 layers of foil have been welded together, as well as foil to terminal, without tearing the delicate foils. With special tooling, this unit also extends the range



The Dual Head Ultrasonic Metal Spot Welder features welding heads on each side of the weld area and is ideal for advanced battery and super capacitor applications.

for attaching wire to terminal, including tinned or oxidized wires.

Like other Sonobond ultrasonic metal spot welders, the Dual Head uses the patented "Wedge-Reed" system of high vibratory force and low amplitude coupling. This enables it to reliably weld lightly tinned or oxidized wires to terminals. The unit is also capable of welding non-ferrous sheet metal. The system is fast, economical, and environmentally friendly.



Features and Benefits

- Has a welding head on each side of the weld area for increased welding capacity.
- Confidently welds wires to terminals and non-ferrous sheet metal, including aluminum up to 3mm thick.
- Can handle up to 80 layers of foil in a single pulse, as used for advanced battery and super capacitor applications.
- Successfully accommodates lightly tinned or oxidized wires.



The Dual Head Ultrasonic Metal Spot Welder confidently welds up to 80 layers of foils in a single pulse.

- Creates a solid-state metallurgical bond with high conductivity.
- Completes the weld process in a single pulse and in just seconds.
- Features a microprocessor controller that welds by height, energy, or time and can recall up to 250 weld protocols.
- Includes automatic frequency control and overload protection.
- Delivers precise, dependable welds

by means of Sonobond's patented Wedge-Reed coupling system.

- Can be flexibly mounted in a variety of orientations for special applications.
- Features long-lasting steel taper lock tips capable of performing up to 100,000 welds with quick tooling changes and fail-safe placement.
- Comes with 3,500-watt power supply.
- Requires only minimal training for easy operation.
- Backed by superior customer service and exceptional technical support.

Applications

The Sonobond Dual Head Spot Welder is especially suited for battery assembly and super capacitor applications. It welds even lightly tinned or oxidized wires to terminals. It also welds non-ferrous similar or dissimilar sheet metal, including copper to aluminum. The unit features *two welding heads*, one on each side of the weld area to provide increased weld capacity. This added capacity enables the unit to confidently process up to 80 layers of foil in a single pulse.

Theory of Operation

Sonobond Ultrasonic's Wedge-Reed system combines high vibratory force and low amplitude coupling to produce precise, repeatably accurate welds.

The power supply converts input line power into high frequency electrical power and transmits the energy to the transducers in the two welding heads. The transducers convert the electrical energy into vibratory energy. This energy is

delivered to the weld in the form of sound waves above the audio frequency range. The applied vibratory energy disperses the oxides and surface films at the weld and creates a strong metallurgical bond without melting the material.

Specifications

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| Power Requirements | 3 phase, 208 volts, 20 amps |
| Operating Frequency | 20 kHz |
| Output Power | 3,500 watts |
| Air Requirements | 80 - 100 psi 4 CFM |
| Dimensions: | |
| • Welding Head | 29" h x 19" w x 18" d |
| • Power Supply | 8" h x 20" w x 22" d |
| Weight: | |
| • Welding Head | 220 lbs |
| • Power Supply | 75 lbs |
| Max. Force | 880 Lbf |
| Weld Timer Range | 0.10 to 4.00 secs |
| Welding Tips | Interchangeable taper lock type, heat-treated tool steel |

Ordering Information

| 3500 watts | |
|--------------|------------|
| Welding Head | MH2036 DHS |
| Power Supply | FC2036 |

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