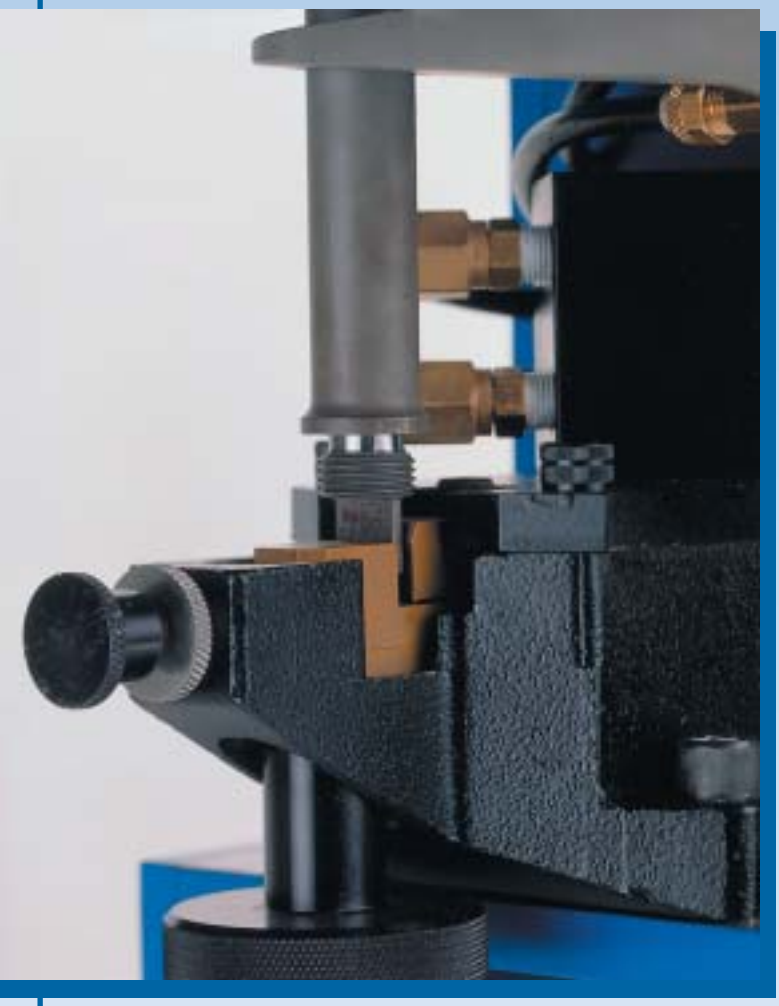
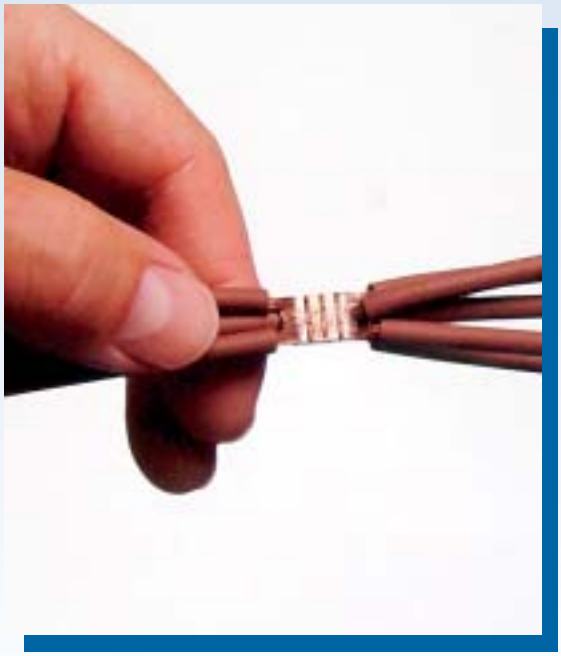
Sonobond®



Wire splicing tooling



SpliceRite™ Ultrasonic Wire Splicer

Ultrasonically splices wire bundles quickly, creating a true metallurgical bond. Microprocessor ensures perfect welds every time.

General Description

Sonobond's SpliceRite ultrasonic wire splicer makes the lowest resistance, most reliable electrical connections possible. Under controlled pressure, this wire splicer system quickly produces a true solid-state metallurgical bond…without melting the wires or producing arcs, sparks, or fumes. No longer do you have to clip, solder, crimp, or dip to make high-quality, high-strength wire connections.

Based on Sonobond's patented "Wedge-Reed" system of high vibratory force and low amplitude coupling, the SpliceRite wire splicer can bond wire bundles even if the wires are oxidized. No other ultrasonic welder can do as well.

Features and Benefits

- Solid-state metallurgical bonds are produced with the lowest possible voltage drop and minimum energy consumption.
- Microprocessor controller stores and recalls up to 250 jobs.
- Weld can be controlled by height, by energy, or by time.
- Stored jobs in microprocessor are locked out from operator adjustment.
- Microprocessor can interface with computer via RS232 port.
- All Sonobond ultrasonic metal welders feature taper lock tips which allow for quick tooling change and fail-proof placement.
- Tips last up to 200,000 welds. Low downtime for redress of tips.
- Burnback, cooling water waste, and high-energy usage associated with resistance welds are all eliminated.
- SpliceRite wire splicer system is very simple to set up and operate.
- System available in 1500 and 2500 watts power capacity.
- Each SpliceRite includes a set of tips which allow for a range of 1mm^2 to 30mm^2 of final weld area depending on wattage of power supply.

Applications

The Sonobond SpliceRite wire splicer is ideal for production manufacture of wire bundles found in the automotive, aircraft, computer, and consumer electronics industries. It is also ideal in a wide variety of other process control and industrial instrument applications.

Theory of Operation

In ultrasonic splicing with the Sonobond SpliceRite™ wire splicer, moderately low static force is used to clamp the wires together. The power supply converts input line power into high frequency electrical power and transmits the energy to the transducer in the splicing head. The transducer converts the electrical energy into vibratory energy. The vibratory energy is delivered to the wire bundle in the form of sound waves above the audio frequency range. The applied vibratory energy disperses the oxides and surface films on the bundle, allowing a strong metallurgical bond to occur without melting the material.

Wire Splicer Operating Sequence

The welder can be set to weld in one of three modes: weld to a pre-selected bundle height; to a fixed weld time; or to a selected energy level. The pre-selected level must be achieved within a time window or a fault is indicated. In this way if the machine malfunctions, the operator can be alerted by the controller screen, by a light or by an audible alarm.

The welder checks pre-weld height to ensure that the correct wire size is loaded. If the wire sizes are not correct or there are wire strands missing, the welder indicates a fault.

The wires are loaded and held between the jaws and lower tip or anvil; as the welder tip descends, the wires are compressed and the ultrasonic energy welds the wires. The welder checks post-weld height. The upper weld tip raises, the jaws retract and the welded wire bundle can be removed and replaced with the next wire bundle.

Power Supply FC-2016

Specifications

Power Requirements	110/220 volts, 50/60 Hz, 20 amps
Output Power	1500 watts/2500 watts
Operating Frequency	20 khz nominal
Air Requirements	Clean and dry at 80-100 psi, 2 SCFM
Max. Force on Wire	600 lbs. @ 100 psig
Weld Timer Range	0.01 to 4 seconds
Welding Tips	Interchangeable taper lock type, heat-treated tool steel

Ordering Information

	1500 watts	*2500 watts*
Welding Head	*WS2016*	*WS2026*
Power Supply	*FC2016*	*FC2026*

SONOBOND® ULTRASONICS

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