

Ultrasonic Metal Welding

**For non-ferrous metals, ceramics
and metal coated materials**



Ultrasonic metal welding is described as a friction welding process, where oxides and other contaminations present on the material surfaces are broken up, and the parts to be welded are brought together under simultaneous pressure. Molecular bonding, similar to the conventional cold-press welding, then takes place.



The greater the challenge, the stronger our commitment:

Ease of automation, weld parameter monitoring and statistical process control are demanded by the market, as they are prerequisites for the use of ultrasonic metal welding in industrial production environments

On the basis of solid engineering know-how and Swiss precision machine building, we offer application specific welding systems for semi- and fully-automated production processes.

ROOP TELSONIC offers high power/high precision equipment for linear and torsional welding process.



ROOP TELSONIC offers portable ultrasonic tube sealing system combined with the ultrasonic power supply to hermetically seal copper tubes in refrigeration units with superior seal reliability and lower cost of operation.

The operator places the Telseal over the charged fill tube and actuates the start switch. A pneumatic cylinder advances a cam to clamp the tube closed and ultrasonic vibrations at 20 kHz vibrate the inner tube surfaces to form a true metallurgical weld. The tube is then cut off from the fill head completing the cycle in under 2 seconds.

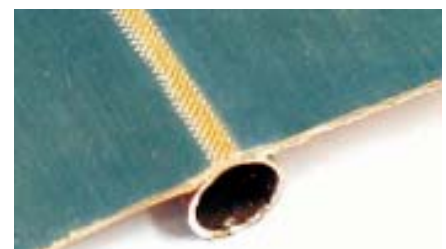


Ultrasonic Tube Sealer Machine - CS-1500 Features

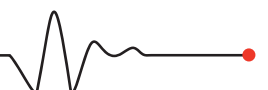
- Charged tubes are crimped, welded and cut off in under 2 seconds
- The reliability of the welded seal exceeds all other methods
- Both the weld tip and anvil offer 4 weld surfaces for the best economy Automatic quality monitoring of each seal
- The handle and hook has been designed for the most convenient and effortless manipulation of the system
- With help of Good/Bad welding LED , operator can easily identify the result
- With help of Encoder we can pre-define the ultrasonic depth and hence over welding can be totally avoided.



Continuous seam welding of copper and aluminum, in particular, is easily achieved with the Rotary Welding Head, combined with an external synchronized drive. The ultrasonic output power can be up to 3000 Watts.



Solar tube and fin welding

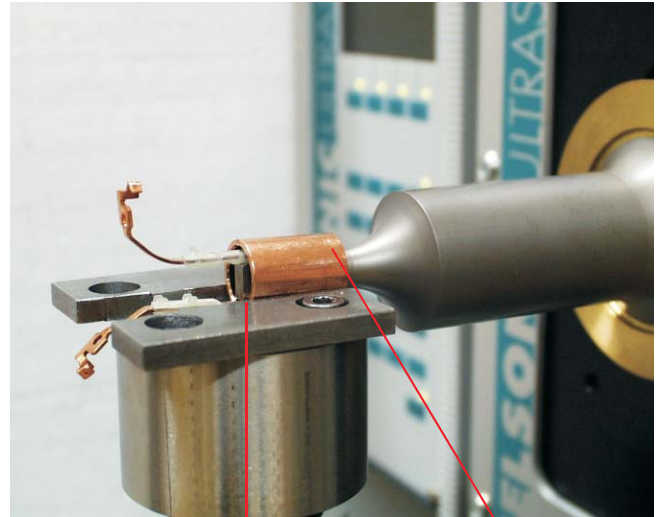




Ultrasonic Rotary head for continuous application



Plastic coated aluminum tube

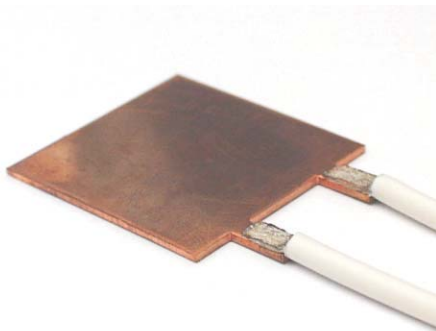


alternator collector

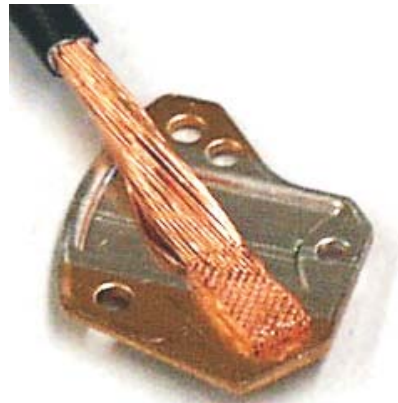
First weld

Second weld

Welding of two contacts into copper tube, with automatic parameter switching



Wire termination



Flexible wires onto terminal



Lithium-ion-battery



Typical torsional applications



Linear ultrasonic metal welder with 4'000 N clamping force and max. 6'500 W output power

Wire splicer

ROOP TELSONIC offers high power/high precision equipment for wire splicing. Precision and reliability are decisive preconditions for electrical connections in automobile wire harnesses. Ultrasonic welding ensures flawless electrical conductivity in the wire splices over years and years.



Compact Machine - light weight

No booster, approx. 12kg including tools
Cross sections from 0.2mm² up to 45mm²
Perfect for splicing on and off assembly board

User-friendly for set up and operation

Simple design
User-friendly touch screen

Simple, fast and secure Tooling Change-over

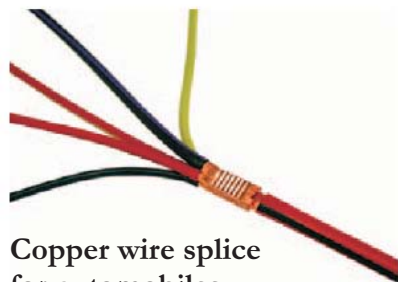
Tool change within 15 minutes
Adjustment is mechanically defined
Innovative tool change concept reduces setup failures
Automatic calibration of the tools. No additional gauge needed.

Very stable and safe process

The rigid mounting design of the sonotrode and the special anvil guide guarantee minimum deflection and energy loss
The special generator technology guarantees a stable amplitude over the total welding (+/-2%).
Automatic system calibration after a tool change and every startup of the machine

Software

Networking with multiple machines
Clearly arranged and extremely user-friendly touch screen software
Option to program a two-step amplitude and/or force profile



Copper wire splice
for automobiles

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