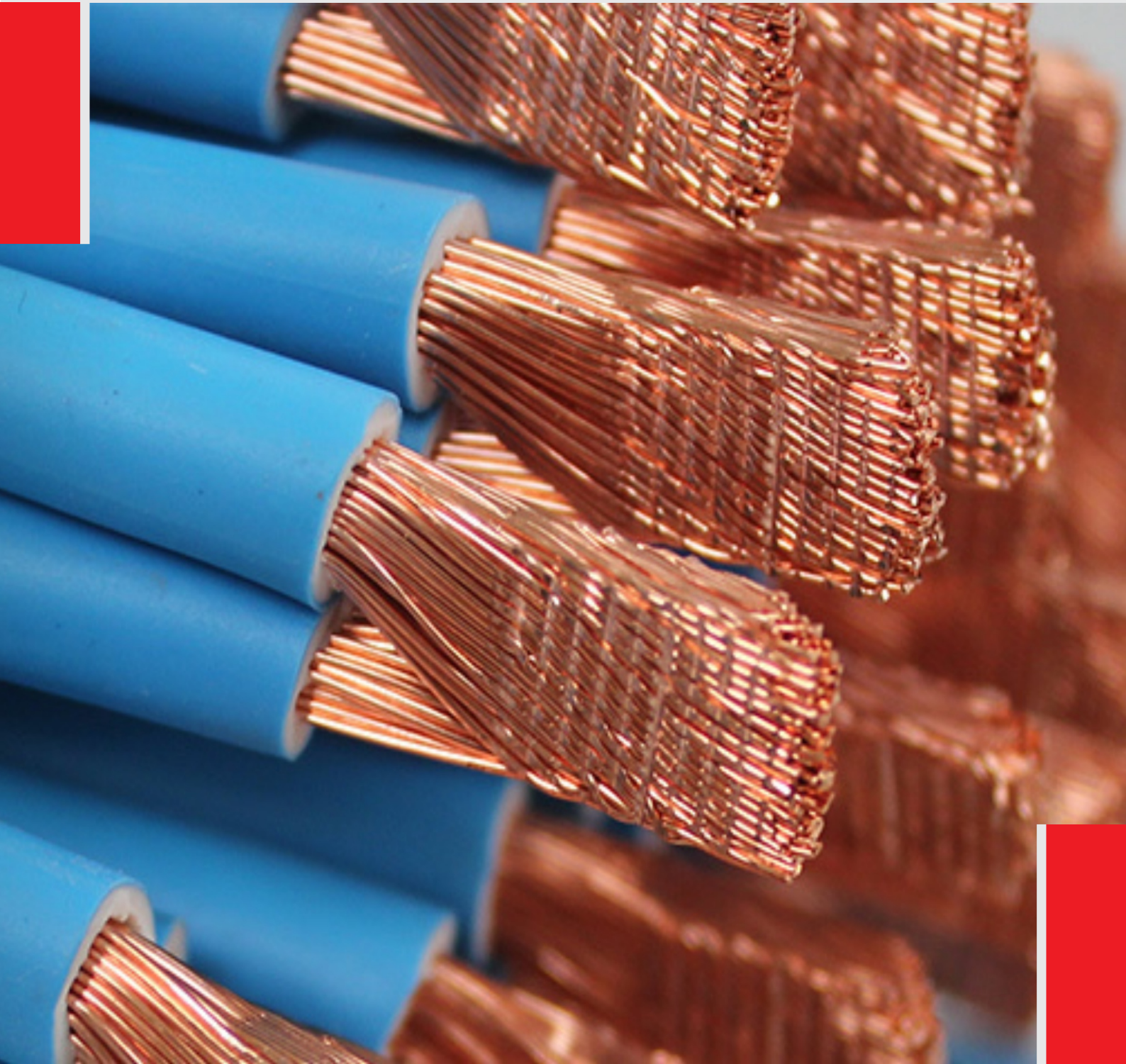


# ***Ultrasonic Metal Welding Systems***



## ***Joining Of NonFerrous Metals***

POWERHOUSE OF ULTRASONIC TECHNOLOGY®



# Ultrasonic Metal Welding Systems

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.

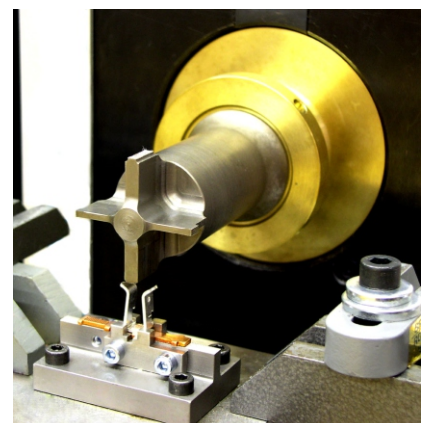
**The greater the challenge, the stronger our commitment:**

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 precision machine building, we offer application specific welding systems for semi and fully automated production processes.



## Advanced Features

- Welds similar and dissimilar non-ferrous material
- Excellent weld quality and helium tight welding
- Fast, reliable, consistent welding quality with microprocessor controller
- No need of any filler materials
- Low power consumption
- Clean and safe process (no sparks, flames and smoke formation) and hence, environmental friendly
- 100% bond conductance
- Can be easily automated
- Continuous welding operation possible





## Wire Splicer

RTUL 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.

### Specifications

Cross section range: 0.2mm<sup>2</sup> to 45mm<sup>2</sup>  
( 6.5bar input)

Weight: 12kg incl. tools and converter

Generator: 3kW<sub>eff</sub> / 20kHz

Tooling life time: 500'000 to 600'000 weldings  
(10..15mm)

Display: SVGA TFT touch screen

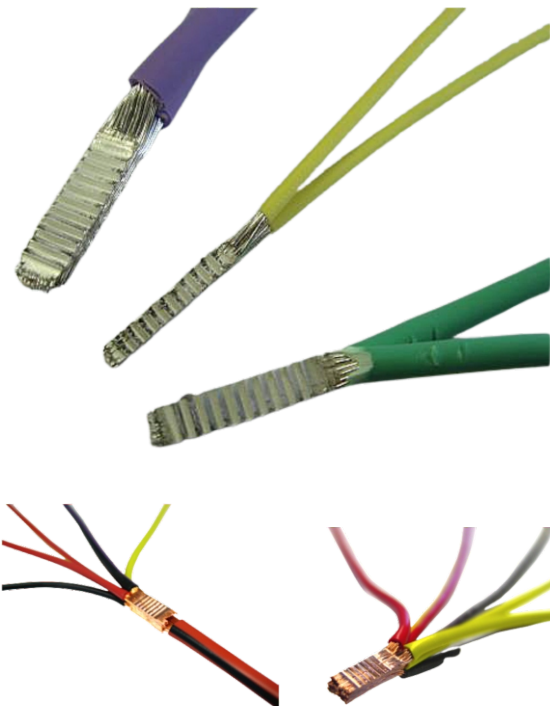
PC: 256MB RAM, WinXP or Win2000

Cooling system: Ventilator / air.



### Advanced Features

- No booster, approx. 12kg including tools
- Cross sections from 0.2 mm<sup>2</sup> up to 45 mm<sup>2</sup>
- Perfect for splicing on and off assembly board
- Simple design & user-friendly touch screen
- 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
- 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
- To program a two-step amplitude and/or force profile



## Rotary Metal Welding

Improvements in quality and efficiency, reduced energy requirements and excellent retention of thermal/electrical properties post weld are the decisive advantages of this new technology.

Ultrasonic has been well accepted as a cold welding technique for continuous welding of solar thermal components which unchanged the basic property of the copper tube and the copper sheet. Without using any external solder or adhesive, the metallurgical bond between the two coppers/aluminum is achieved by ultrasonic technique. This ensures a very high degree of thermal efficiency. The resultant weld is continuous and there are no dry spots. The ultrasonic bond is achieved at a molecular level and as there is no external material, even the small width of the weld provides good transfer of the heat.



### Specifications

Technique : Ultrasonic

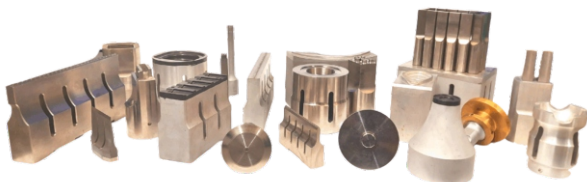
Maximum welding length : 2 m at a time

Speed of welding : 20 mm/sec

Controlled through : PLC

Power : 3 KW

Ultrasonic generator : Amplitude & frequency controlled



### Sonotrodes

An acoustic tool designed to have a specific longitudinal natural resonant frequency which transfers sound energy to the plastic part. Every Plastic welding job needs the welding tool specially made to required specifications. So also the fixtures. RTUL designs horns of perfect profiles, machined out of the right alloy for longer life and for efficient transmission of ultrasonic power to the welding spot. Developing of custom made horns, is our speciality.



## Expertise Ultrasonic Solutions

We have successfully been catering to the needs of various industries.



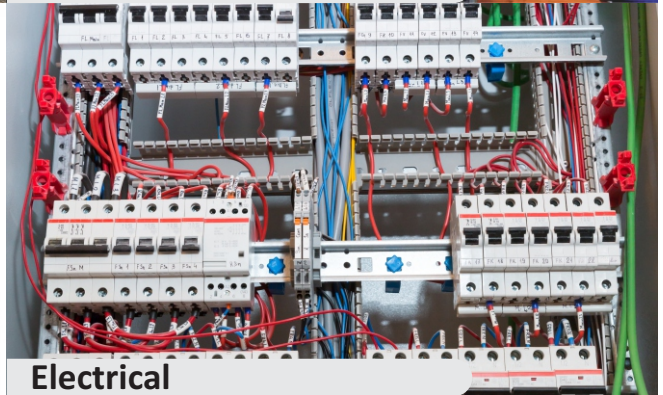
**Aerospace**



**Automotive**



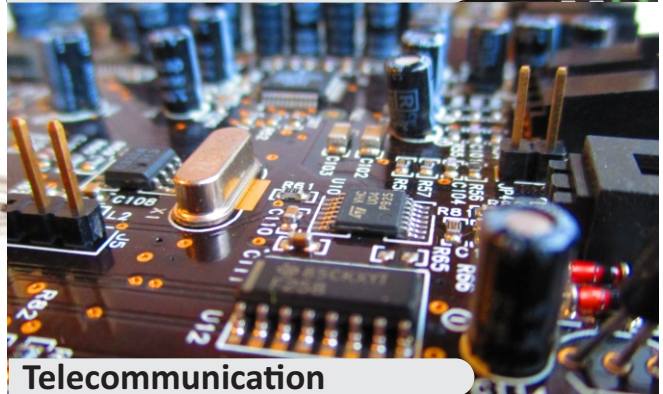
**Appliances**



**Electrical**



**Medical**



**Telecommunication**



**Solar**



**Packaging**

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