ultrasonic wire splicing systems

ACTUATORS

FEATURES
- Automatic splice width adjustment from 0.5 to 40 mm (depending upon power level and cable)
- Patented self-orienting horn permits simple and precise tool change in under one minute
- Patented single piece dual nodal mount horn and booster stack
- Heavy duty linear bearings assure precision motion
- Bearings are sealed and prelubricated for longest life
- Foot pedal cycle actuation
- Electronic Pressure, Height and Width Control

Sonics’ 20 kHz ultrasonic wire splicing systems consist of the wire splicer shown above and a power supply as shown below.

POWER SUPPLIES

MODELS
WSC SmartControl with Time, Energy, Width and Height-Based Weld Modes

POWER LEVELS
- 1500 Watts Peak Power
- 2500 Watts Peak Power
- 4000 Watts Peak Power

Sonics’ SmartControl (WSC) Series power supplies provide full color touch screen controls along with the advanced features listed below.

POWER SUPPLY FEATURES

- Microprocessor Controlled
- Automatic Frequency Tuning
- Digital Amplitude Control
- Digital Force Triggering
- Weld Time Delay Setting
- Afterburst Time Setting
- Multiple Job Storage
- Digital Stack Wattage Display
- Digital Stack Frequency Display
- Weld Cycle Counter
- Upper and Lower Weld Mode Limit Settings
- Soft Start Overload Protection Circuitry
- Load Regulation Circuitry
- Color Touch Panel Operator Screen
- Weld Cycle Graph Chart Screen
- Weld Teach Mode
- Weld Sequence Mode
- Amplitude and Pressure Ramping
- Timed Converter and Horn Air Cooling Cycle
- English and Metric Weld-to Height and Width Settings
- Password Protected Four-Level User Access
- PLC I/O Interface Connection
- PC Interface Connection
- Bar Code Scanner Connection

for more information: 1-800-745-1105  www.sonics.com
process validation

Pre-Weld
To ensure correct wire loading, the “pre weld height” of the wires is measured and compared to the “pre-height limits.” If the height is outside the limits, the cycle is aborted and the operator is alerted to the wire loading error.

Weld
With the pre-height test satisfied, ultrasonic vibrations scrub the wire strands at the 20 kHz frequency to remove surface oxides and contaminants.

A precise amount of ultrasonic energy is applied to produce the weld, thus if there is a variation in the amount of oxidation or contaminants on the wire strands, the weld cycle is automatically extended to disperse the oxides and achieve optimal weld results.

Post Weld
After the weld cycle is complete, the welded splice is measured to confirm proper compaction and splice quality.