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

Sonic's 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

Sonic's 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
system options

**SmartControl**
- Bar Code Scanner

**Smart Program:**
- SmartControl System PC Interface Program

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.

MWS20 dimensional data

![Dimensional Data Diagram]

specifications

**Actuator Data:**
- MWS20 Wire Splicer Weight: 35 Lbs. (15.8 kg)
- Pneumatic Requirement: 80 PSI Clean and Dry Air Service

**Low Profile Power Supply Data:**
- Peak Output Power: 1500 W or 2500 W
- Power Supply Weight: 21 Lbs. (9.5 kg)
- Power Supply Dimensions: 15.2" (386 mm) Wide x 7.0" (178 mm) High x 18.7" (462 mm) Deep
- Power Requirement: 220 VAC @ 20A

**High Profile Power Supply Data:**
- Peak Output Power: 4000 W
- Power Supply Weight: 70 Lbs. (31.7 kg)
- Power Supply Dimensions: 17.6" (447 mm) Wide x 10.7" (272 mm) High x 22.5" (571 mm) Deep
- Power Requirement: 220 VAC @ 30A