SONICS®
SONICS & MATERIALS, INC.

20 kHz

ultrasonic wire splicing systems

ACTUATORS

FEATURES

- Automatic splice width adjustment from 0.5 to 40 mm (depending upon power level)
- 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 and no flash
- Bearings are sealed and prelubricated for longest life
- Foot pedal cycle actuation
- EKIT – Electronic Pressure, Height and Width Control

MWS20 Wire Splicer

Sonics' 20 kHz ultrasonic wire spicing 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


WSC Low Profile


WSC High Profile

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

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

Innovating *since* 1969

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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

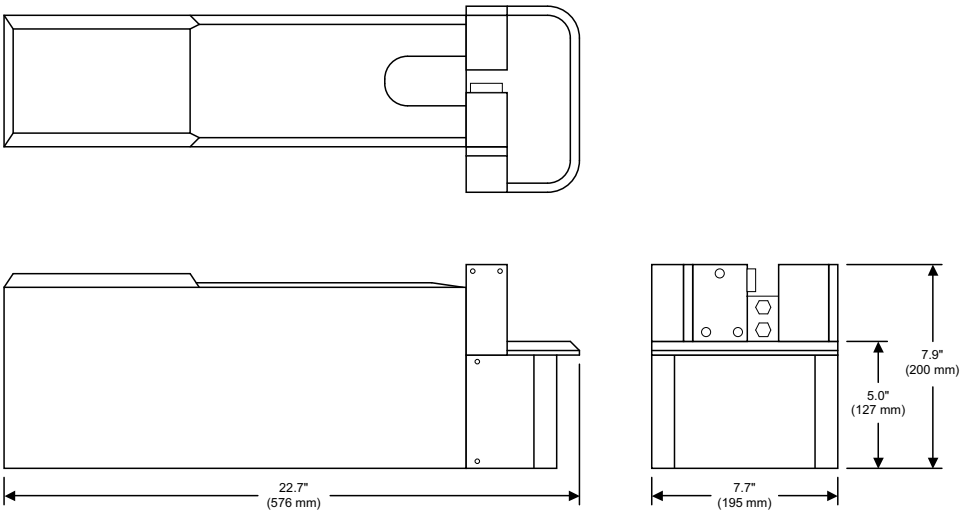
With the pre-height test satisfied, ultrasonic vibrations scrub the wire strands at the 20 kHz frequency to remove surface oxides and contaminants.

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



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 Watts (1.5 kW) or 2500 Watts (2.5 kW)
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 Single Phase

High Profile Power Supply Data:

Peak Output Power: 4000 Watts (4.0 kW)
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 Single Phase

Corporate Headquarters 53 Church Hill Road, Newtown, CT 06470 USA
203.270.4600 800.745.1105 203.270.4610 fax info@sonics.com
Asia Office 5/F Building No. 8, 153 Jumen Rd. 200023, Shanghai P.R. CHINA
+86-21-53021255 +86-21-53022522 fax

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