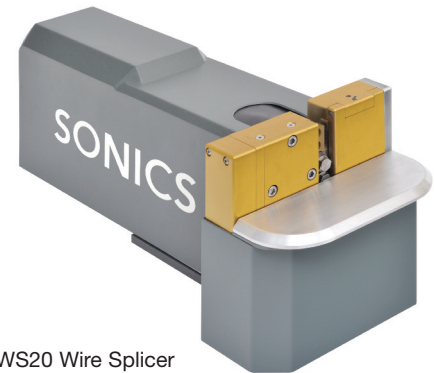


ultrasonic wire splicing systems

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



MWS20 Wire Splicer

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



WSC Low Profile



WSC High Profile

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 | ■ 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 |

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

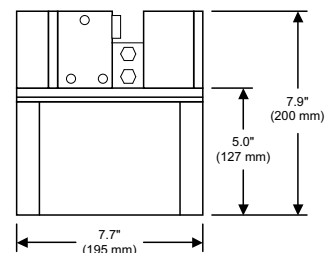
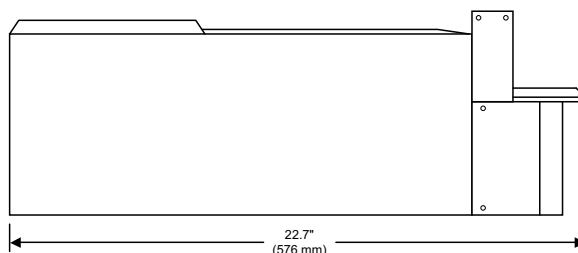
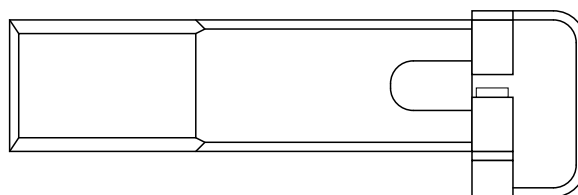
With the pre-height test satisfied, ultrasonic vibrations scrub the wire strands at the 20 kHz frequency to remove surface oxides and contaminants.

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 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