

## ultrasonic spot welding systems

### ACTUATORS

#### FEATURES

- Pneumatic Actuation
- Rigid I-Beam Cast Center Frame
- Patented 90° Self-Orienting Keyed Horns and Tips
- Single Piece, Dual Nodal Mount Horn and Booster Stack
- Precision Micrometer Stack Up and Down Stops
- Independent Horn and Converter Air Cooling Flow Control
- Pre-Lubricated and Sealed Linear Bearings

Sonics' 20 kHz ultrasonic metal welding systems consist of an actuator (available as a stand-alone unit or on a plate or a base, as shown above) and a power supply, the MX or MSC series, as shown below.



MWB20 Actuator  
on Integral Base



MWP20 Actuator  
on Plate



MWA20  
Actuator

### POWER SUPPLIES



MX Series Low Profile



MX Series High Profile



MSC Low Profile



MSC High Profile

#### MODELS

**MXC** Remote Impulse Actuation

**MXT** Time Based Weld Mode

**MXE** Time and Energy Based Weld Modes

**MSC** *SmartControl* with Time, Energy and Height-Based Weld Modes

#### POWER LEVELS

- 1500 Watts Peak Power
- 2500 Watts Peak Power
- 4000 Watts Peak Power

Sonics' 20 kHz power supplies come in 2 versions, the MX Series, with standard keypad operation and the *SmartControl* (MSC) Series with full color touch screen controls. The features of the models are compared below.

POWER SUPPLY FEATURES	MXC	MXT/ MXE	MSC
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	■	■	■

POWER SUPPLY FEATURES	MXC	MXT/ MXE	MSC
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 Settings			■
Password Protected Four-Level User Access			■
Serial Printer Port Connection		■	
PLC I/O Interface Connection	■	■	■
PC Interface Connection			■
Bar Code Scanner Connection			■

## system options

**EKIT:**  
*SmartControl*  
 Electronic  
 Pressure  
 and Height  
 Control



**Foot Pedal  
 Switch with  
 Emergency Stop**



**X-Y Adjustable  
 Fixture Anvil**



**SmartControl  
 Bar Code  
 Scanner**



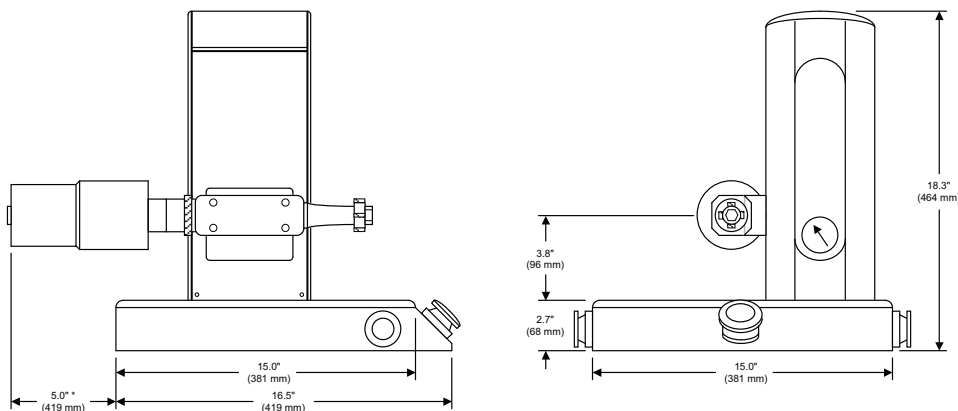
**Secondary Booster:**  
 Aluminum or  
 Titanium  
 Secondary  
 Booster



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



## MWB20 dimensional data



\* Add Approximately 5.5" (140 mm) for Secondary Booster

## specifications

### Actuator Data:

MWA20 Actuator Weight: 44 Lbs. (19.9 kg)  
 MWP20 Actuator on Plate Weight: 56 Lbs. (25.4 kg)  
 MWB20 Actuator on Integral Base Weight: 85 Lbs. (38.5 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" (476 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