



# SONICS®

# 哥威雅

world-wide leader in *ultrasonic technology*

Sonics & Materials, Inc.



Model 1595  
Welding Press

**new**  
**15 kHz**

**Models 1595/1596**

## Ultrasonic Plastics Welding Systems

### more Power Features



GX-Series Power Supply

#### new Power

Now available in: ■ 3500 watts ■ 4500 watts

#### new Features

- Automatic Frequency Tuning
- Digital Amplitude Control
- Ultrasonic Horn/Stack Frequency Display
- Good Part/Bad Part Output Signal
- Digital Soft Start Amplitude Ramp Control
- Line Voltage Phase Angle Regulation

#### new Models

**Weld by:** digital time - **Model GXT**  
 digital time and/or constant energy - **Model GXE**  
 digital time, constant energy and/or distance - **Model GXL\***  
*\*Requires optional linear encoder*

#### STANDARD FEATURES INCLUDE:

- Multiple Job Storage
- Digital Force Triggering
- Calibration Pulse Prior to Every Weld Cycle
- Back-Lit LCD Display
- Ultrasonics Load Meter Scale
- Upper and Lower Weld Limit Settings
- RS232 Serial Port Printer Output
- Optional PLC I/O (Input/Output) Ports
- Soft Start Overload Protection Circuitry
- Load Regulation Circuitry
- Distance Mode Settings in English or Metric Units (with optional linear encoder only)

Leaders in the field of ultrasonic plastics welding equipment and technology since 1969, Sonics & Materials offers its new line of **GX-Series** ultrasonic power supplies, combined with 15 kHz welders, for welding medium to large-sized parts at higher amplitudes.

The new GX-Series, available in 3500 and 4500 watts, provides microprocessor control and consistent reliability for every application. Power supplies feature smart-logic, user-friendly keypad navigation and line voltage phase angle regulation which allows for single phase power requirement and promotes conservation of on-demand electrical energy.

#### Power Supply

Dimensions: 17.75" W x 11.00" H x 22.50" D  
(450.8 x 279.4 x 571.5 mm)

Weight: 70 lbs. (31.8 kg)

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## Welding Press Description

### Model 1595 Bench Press

The Model 1595 is a bench model press with a single piece rigid cast aluminum base and hub; dual non tie-down, anti-repeat palm buttons; and front emergency stop. The welding press has a motorized lift mechanism to raise and lower the actuator during setups and adjustment. Front panel controls include individual up and down pressure regulators and gauges, head down switch, and head up and down speed controls. Non-contact cycle start buttons are optional.

### Model 1596 Slimline Actuator

The Model 1596 is designed specifically for use in automated systems, particularly where space is at a premium. The Slimline head can be mounted in any position on a bridge or other rigid structural member. For maximum reliability and unparalleled smoothness, the welding head is guided on precision ground shafts with low friction Thomson linear ball bushings.

## Welding Press Specifications

### Model 1595 Bench Mounted Press

**Column Diameter:** 3.75" (9.5 cm)

**Down Stroke:**

4" (10.2 cm) standard and 6" (15.2 cm) optional

**Air cylinder:** 4" (10.2 cm) diameter

**Dimensions:**

**Height:** 56" (140 cm)

**Width:** (without base) – 10.25" (26 cm)

**Base Dimensions:** 16" W x 3.75" H x 25" D  
(40.6 x 9.5 x 63.5 cm)

**Center line of horn to center of column:**

13.5" (34.3 cm)

**Maximum height of horn above work surface:**

15" (37.1 cm)

**Weight:** 280 lbs. (127.2 kg)

### Model 1596 Slimline

**Down Stroke:**

4" (10.2 cm) standard and optional 6" (15.2 cm)

**Air cylinder:** 4" (10.2 cm) diameter

**Dimensions:**

**Height:** 29.5" (74.9 cm), **Width:** 9.375" (23.8 cm)

**Mounting Holes:** (8 places) 0.515" (1.30 cm) diameter thru

**Center to Center width distance:** 8.375" (21.3 cm)

**Center to Center height distance:** 6.625" (16.8 cm)

**Center of Horn to Back plate:** 5.687" (14.4 cm)

**Weight:** 81 lbs. (36.8 kg)

## Models 1595/1596 Standard Features

### Standard features include:

- Dual column low friction linear slides and bearings
- Direct in-line air cylinder
- Linear encoder for distance welding (optional)
- Front panel motorized press head up/down control (Model 1595 only)
- Pre-trigger capability standard
- Piezoelectric force transducer ensures accurate and repeatable starting trigger pressure
- 360° snap-in stack assembly simplifies radial horn alignment
- Adjustable positive stop
- Optional automation limit switches
- Optional extended length column (Model 1595 only)
- Clamp force at 90 psig/1130 lb. (5026 N)
- Pneumatic requirements – clean, dry air at 100 psig
- Input voltage – 220 VAC – single phase

## 15 kHz Welding Overview

The 15 kHz welder extends the range of our capabilities for assembling large parts. With 15 kHz, most thermoplastics can be welded faster and, in most cases, with less material degradation than with 20 kHz. Parts marginally welded at 20 kHz, especially those fabricated from the high performance engineering resins, can be effectively welded at 15 kHz.

At the 15 kHz frequency, horns have a longer resonant length and can be made larger in all dimensions. These horns, with greater area and higher amplitude, facilitate the welding of larger assemblies.

Another important advantage of using 15 kHz is that there is significantly less attenuation through a thermoplastic material, permitting the welding of many softer plastics, and at greater far field distance than had previously been possible.



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