

## MODELS P15 & A15

# 15 kHz Ultrasonic Plastics Welding Systems

Available with 2500 Watts and 4000 Watts

*Our 15 kHz welder extends the range of capabilities for assembling large parts.*

### 15 kHz Overview

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 high performance engineering resins, can be effectively welded at 15 kHz.

At lower frequencies, horns have a longer resonant length and can be made larger in all dimensions. Horns with a greater area and higher amplitude facilitate the welding of larger assemblies. Uniform amplitude across the horn increases the integrity of the weld, greatly improving results.

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.



Model  
P15 Press

### Standard features include:

- Automatic calibration pulse prior to every weld (microprocessor models only)
- Electronically adjustable output control enables precise amplitude selection. (Not available on 4000W units)
- Piezoelectric force transducer ensures accurate and repeatable starting trigger pressure (microprocessor models only)
- 360° snap-in converter simplifies mounting and adjustment
- Clamp Force at 100 psig/1256 lb. (5587 N)
- Pre-trigger capability standard
- Independent speed control for head ascent and descent (model P15 only)
- Thomson liner ball bushings and 1" diameter heavy duty guide rods for optimum rigidity
- RS232 serial port interface (microprocessor models only)
- Pneumatic requirements – clean, dry air at 100 psig
- Motorized press welding height adjustment (model P15 only)
- External output port for quality control limits and rotary table control (microprocessor models only)
- Enhanced memory capability – stores up to 9 separate jobs and sequences 9 jobs

## Welding Press Description

### Model P15 Bench Press

The Model P15 is a bench model press with a rigid cast aluminum base, dual non tie-down, anti-repeat palm buttons and 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. The Model P15 can be supplied with either the microprocessor or timer controlled power supply.

### Model A15 Actuator

The Model A15 is designed specifically for use in automated systems, particularly where space is at a premium. The Actuator 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. The Model A15 can be supplied with either the microprocessor or timer controlled power supply. A four wire cable is provided for easy activation of the system.

## Welding Press Specifications

### Model P15 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: 270 lbs. (122.5 kg)

### Model A15 Actuator

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" 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: 85 lbs. (38.6 kg)

## Power Supply Description

### Model M Series

The microprocessor-controlled power supply, capable of welding in time or constant energy mode, assures repeatable, consistent results. A calibration pulse prior to every cycle separates machine losses from the energy imparted into each component. The system's keypad, located on the front panel of the power supply, allows assembly parameters such as weld time, hold time, energy desired and quality control limits to be easily entered. The microprocessor controller can store up to nine different jobs and can also be programmed to sequence these jobs. The power supply also features a power monitor, tuning control and overload protection circuitry to prevent damage to the components if the system is operated under adverse conditions. The M series power supplies have D type connectors to interface with a printer, monitor, or personal computer for magnetic storage of information or to perform statistical analysis.

### Model T Series

The T series time-based power supply is solid state in design, features proven circuitry, and is modular in construction. The power supply incorporates automatic frequency control to eliminate the need for constant adjustment during the welding cycle. For maximum reliability, an overload protection circuit has been incorporated to automatically terminate the welding cycle when the system is operated under adverse conditions. A weld timer covering two ranges and a hold timer are provided on the T Series power supply. LED front panel lights give a visual display of the timing cycle. Like the M Series power supply, the T Series features a power monitor and tuning control.

## Power Supply Specifications

### M Series

Frequency: 15 kHz  $\pm$  150 Hz

Power Input: 220 VAC 50/60 Hz

Power Output: 2500 watts, 4000 watts

Dimensions: Height 6.375" (16.2 cm)

Width: 17.25" (43.8 cm)

Depth: 22.375" (56.8 cm)

Weight: 61 lbs (27.7 kg)

### T Series

Frequency: 15 kHz  $\pm$  150 Hz

Power Input: 220 VAC 50/60 Hz

Power Output: 2500 watts, 4000 watts

Dimensions: Height 6.375" (16.2 cm)

Width: 17.25" (43.8 cm)

Depth: 22.375" (56.8 cm)

Weight: 61 lbs (27.7 kg)

Weld Timer:

Two ranges 0.10 - 1 second  
and 0.10 - 5 seconds

Optional 25 second maximum

Hold Timer: 0.10 - 5 seconds

### Options

Linear Encoder - allows welding by distance in both incremental and absolute modes

Automatic or manual sound enclosure



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