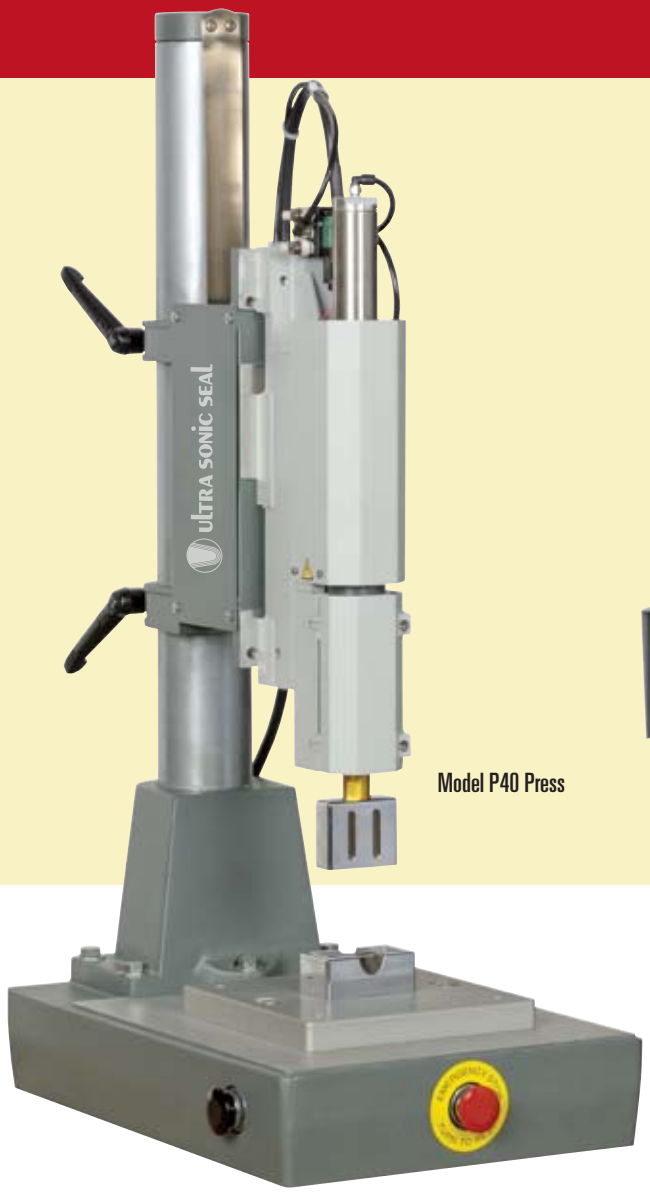
ULTRA SONIC SEAL

MODELS P40 & A40

40 kHz Ultrasonic Plastics Welding Systems



Model P40 Press

Model MP Power Supply

Ultra Sonic Seal 40 kHz Systems

Ultra Sonic Seal offers 40 kHz ultrasonic plastics assembly systems with a power output of 700 watts. Power supplies offer digital control with an available linear encoder, or microprocessor-based systems featuring unique calibration pulse for the most demanding applications.

All of Ultra Sonic Seal's 40 kHz ultrasonic welding equipment can be configured to meet the particular requirements of a wide range of applications.

40 kHz Overview

Ultrasonic welding at 40 kHz is particularly suited for smaller, precision plastic assembly applications that require gentler action. The tooling of 40 kHz welders is one-half the size of units operating at the more common 20 kHz frequency range. This results in a lower amplitude of horn vibration and consequently less stress on the parts being assembled.

The gentler action of 40 kHz ultrasonic welding is fast, precise and virtually inaudible. 40 kHz welders and components are smaller in size and are more readily accommodated where space is at a premium in automated assembly systems.

Typical assembly applications using 40 kHz ultrasonic welders include microelectronic components, printed circuit boards, high-precision assemblies such as intricate medical devices, and plastic parts in which class "A" surface marking is undesirable.

40 kHz is also well suited for ultrasonic staking or riveting, where the controlled flow of the molten plastic is used to capture or retain another component, usually of a dissimilar material.

40 kHz Ultrasonic Welding Systems: Features and Specifications

Power Supplies

Ultra Sonic Seal's 40 kHz, 700 watt ultrasonic welders offer a wide range of power supplies to meet particular performance and weld control requirements. All the following power supplies feature auto tuning using phase lock loop (PLL) design which matches the frequency of the power supply to the converter/booster/horn assembly and adjusts to variable temperature and loading conditions. The power supplies are voltage-stabilized and can run at constant amplitude and power across a wide range of voltage inputs. Amplitude setpoint can be controlled by an external PLC or 0-10 volt source. Since there are no mechanical relays, circuitry is protected from current overloads in nanoseconds, preventing failures from short circuits or cracked horns. These power supplies are designed to start under extremely heavy loads.

Model DT Series

The weld-by-time based DT power supply offers operational parameters that are easily entered by keypad and stored in English or metric units. Weld settings include delay time, weld time, hold time and repulse time. Job memory allows for storage of up to 9 applications and the system includes an overload reset indicator.

Model M Series

The microprocessor-controlled M power supply allows for welding in either a time or constant energy mode and features a unique calibration pulse prior to every weld cycle. Additionally, a force trigger value can be entered to require a pressure load to the application prior to ultrasonic activation. With an overload reset indicator, reject alarm and RS-232 data and graph output, the M power supply's operational parameters are easily entered via keypad and stored in English or metric units. Job memory allows for storage of up to 9 applications.

Model C Series

C Power Supplies are designed to run continuously for applications requiring high-speed, continuous sealing. Ultrasonics can be on/off activated externally through a PLC when used in automated systems. For OEM's and RF sequencing requirements, power supplies are also available as plate-mounted board "kits" for direct mounting within a machine's control panel.

Welding Stands and Assembly System Configurations

Ultra Sonic Seal's standard 40 kHz ultrasonic welders are configured as bench top units or actuators for special automated machinery integration. Ultrasonic "stacks" (converter/booster/horn) are also available for special machinery integration and where multiple RF sequencing stations are required.

Model P40 Welding Press

The P40 Welding Press is a bench-top unit with a rigid cast aluminum base, dual, non tie down, anti-repeat palm buttons, and emergency stop. The press has adjustable pressure triggering and an adjustable positive stop. For greater operational flexibility, the power supply can be remotely positioned up to 35 ft. (10.6 m) from the welder.

Model A40 Actuator

Designed for use in automated assembly systems, the Actuator head can be mounted in any position on a bridge or other structural member. The welding head is guided on precision linear roller bearing slides and can be matched with all of Ultra Sonic Seal's power supplies including DT, M and C models.

Optional Linear Encoder

For more precise weld depth control, an optional linear encoder is available on either the model P40 press or A40 actuator with depth of weld accuracy of +/-0.001" (0.025mm).

For extremely high precision, close tolerance depth of weld applications, Ultra Sonic Seal's Electric Press with stepper motor drive and M series power supply is recommended. To find out more about the Electric Press, call or email to request a brochure.

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ULTRA SONIC SEAL
200 Turner Industrial Way • Aston, PA 19014, USA
Tel. 610.497.5150 • Fax 610.497.5195 • email: info@ultrasonicseal.com
www.UltraSonicSeal.com