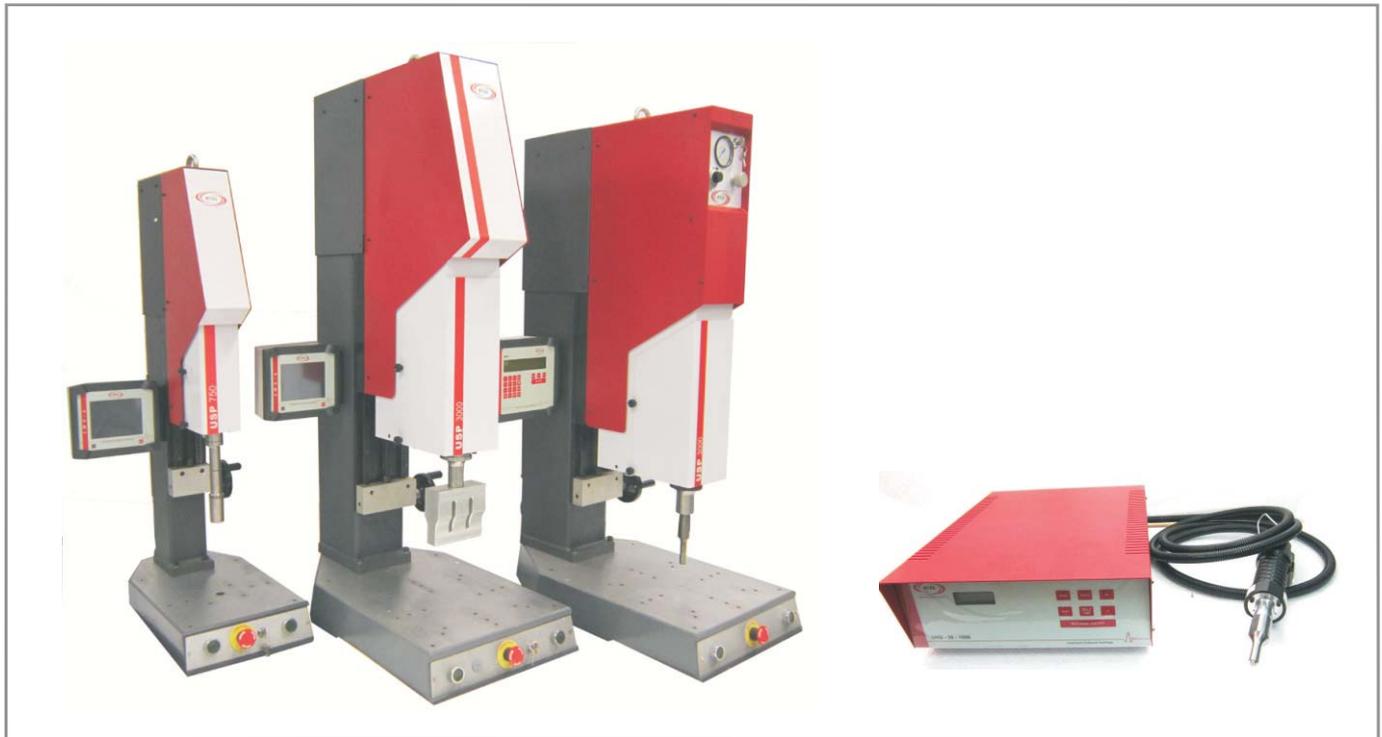


Ultrasonic Plastic Welding System



PLASTIC WELDING



It is hard to imagine how the requirement for quality and reliability of welds, economy and the ecological demand placed on today's production methods could be met without the modern production engineering of ultrasonic welding.

As a joining process for industrial thermoplastics, the ultrasonic method is very well proven in practice.

Particularly in the production of mass-produced parts, the process offers definite advantage over previous methods such as for instance high strength, clean weld seams, fast processing times, extremely low rejection rates and low energy consumption.

In addition to its main application which is welding of moulded thermoplastic parts, this technique can be used successfully for riveting, forming, stacking as well as embedding of metal parts into thermoplastic materials.

Each ultrasonic welding installation comprises the following main components:

Electronic Ultrasonic Generator, Converter, Booster, Sonotrode, Pneumatic Press and Control Unit. The Generator is the heart of every ultrasonic welding system, its function being to supply the converter with an alternating current of a given ultrasonic frequency. This is then converted by the transducer into mechanical / ultrasonic vibrations which are finally transmitted via, the booster and sonotrode to the part being welded.

Roop Telsonic Ultrasonix Limited offers wide selection of standard welding equipment and installation which with respect to generator performance, range of welding force, frequency of operation and possible uses, is well able to satisfy your specific application requirements.



Components of the Machine



Ultrasonic Generators

The latest development of Telsonic-Generators in the range of 500W to 4500W is based on sophisticated and most modern technology featuring:

- ★ Amplitude regulated power system (ARP)
- ★ Electronic booster by means of electronically selecting amplitude-ranges of 100/90/80/70 %.
- ★ Fully automatic tuning and frequency control under all load conditions.
- ★ Built in circuit protection for all possible fault and load conditions.
- ★ Modular construction with built in process-interface.
- ★ Clearly arranged front panel with optical display of the operational conditions.

Converter and Booster

- ★ Fully enclosed convertor with standard integrated cooling system and connection hood for full turning capacity of 360 Degree.
- ★ Novel Booster mounting system for maximum rigidity.
- ★ Five standard boosters with transformation ratio of: 0.5/1/1.5/2/2.5.
- ★ The whole assembly designed as a “snap-in-unit”.
- ★ Ideally suited for installation in special and automatic machines.
- ★ Titanium Booster.



Horn/Sonotrode

An acoustic tool designed to have a specific longitudinal natural resonant frequency which transfers sound energy to the plastic part. Every Plastic welding job needs the welding tool specially made to required specifications. So also the fixtures. **RTUL** designs horns of perfect profiles, machined out of the right alloy for longer life and for efficient transmission of ultrasonic power to the welding spot. Developing of custom made horn, is our speciality.



IWC-5(Control Unit)



- ★ 5.7” Color touch screen.
- ★ One power ON/OFF key.
- ★ One home key.
- ★ Selectable ON/OFF Control(Automatic/Manual).
- ★ Selectable calibration pulse for Sonotrode tuning.
- ★ Special setup mode for welding press setting.
- ★ Provides 4 different trigger modes and 5 different weld modes.
- ★ Force, Energy and distance measurement and control.
- ★ Pressure, depth and amplitude control.
- ★ Automatic saving of last 10 welding results.
- ★ User can store 10 different job settings.(Data set management)
- ★ In-built RTC ,rotary table interface with 2 sensor support, pick and place system interface and diagnostic mode.
- ★ 6 types of different quality windows.
- ★ Provides ultrasonic generator frequency measurement.
- ★ Supports 7 different generators ,5 different presses and 5 types of start modes.
- ★ Provides 4 user programmable inputs and outputs.

MPS-4 (Control Unit)



- ★ Quality Control Window.
- ★ Reject Signal for Welded component falling out of Quality Control Window Set.
- ★ Force Trigger Function.
- ★ Direct Read out of Power Consumed in Watts.
- ★ Direct Display of Welding Curve.
- ★ Amplitude Variation from 50% to 100% possible.
- ★ Depth Control.
- ★ Data Protection facility using Password.
- ★ 2 Steps Welding possibility.
- ★ 2nos User Defined outputs available.
- ★ Communication with PC if Telso Software procured.



Applications from A to Z

Automobile	Drawing equipment	Mechanical engg.	Photography	Teaching aids
Clock /Watches	Energy Meters	Medical equipment	Zip fasteners	Pump
Cosmetics	Electronics equipment	Office equipment	Precision mechanics	Textiles
Furniture	Domestic appliances	Lighting equipment	Telecommunications	Optics
Sound- Packaging	Radio-TV Toys	Video	Sports goods	& Many more



TUBE SEALING



PACKAGING



LIGHTINGS



TOYS



SURGICAL



ENERGY METER



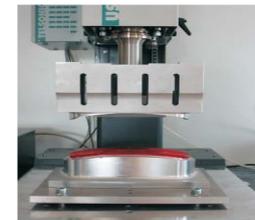
METAL INSERTION



TELECOMMUNICATIONS



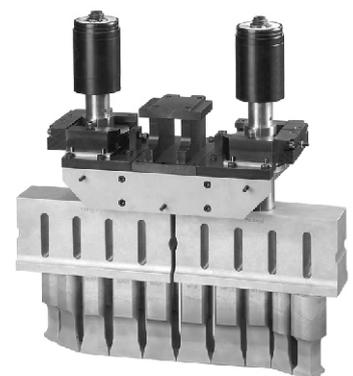
DOOR TRIM



AUTOMOTIVE

Multiple welding head with complex compound sonotrodes

The robust construction of the USP3000 welding press and maximum clamping force of 3000 N allows the use of up to three 20 kHz oscillating systems with large, complex mother/daughter sonotrodes. The double-head version shown, for the welding of dishwasher spray arms, is fed by two 5000 W ultrasonic generators (total output 10 kW) and contains two mother sonotrodes each with nine insert sonotrodes, constructed as a quick-change welding head for an other spray arm type.



Special purpose machines to meet specific customer requirement is one of our strong points.
 Building of special purpose machine is a RTUL speciality.
 For many years, we have designed and built systems, which cater to the precise demands of the customer.

Proven multiconverter technology

Customized Solutions For Complex Projects

For large/complex components, systems with multi convertor design (with mother/daughter horns) are available as per specific requirements. Multiconverter units are frequently used in the welding of large-area, asymmetrical parts, for example in automobile and apparatus engineering or with toys. The advantage of multiconverter system lies in the construction of small, simple sonotrodes which facilitates to optimise the weld quality along the whole weld contour due to local targeting.



TECHNICAL SPECIFICATIONS

	UHG-500/1000	USP 10-500/1000	USP 750	USP 3000-1000/1500/2000/3000/4500	USP 3000/6000 - 3000/4500
Pneumatic Press	-	USP10	USP750	USP3000	USP3000/6000
Closing Force Max.	-	400N	750N	3000N	3000N/6000N
Generator	SG25-1000	SG25-500/1000/M	SG25-1000/1500	SG22-1000/1500/2000/3000/4500	SG22-3000/4500
Ultrasonic O/p Power (W)	500/1000	500/1000	1000/1500	1000/1500/2000/3000/4500	3000/4500
O/p Frequency (KHz)	35	35	20/36	20	15
Dimension- Press (WxDxH)mm	Dia 54x220	300x500x490	360x575x1000	410x685x960	410x685x960
Weight - Press (Kg)	0.6/1/2	22	60	100	100
Max. Stroke (mm)	-	50	100	100	100
Throat Depth (mm)	-	80	150	275	275
Working Table (WxD)mm	-	200x300	300x325	465x410	465x410

Newly launched Servo Press- No Pneumatics

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