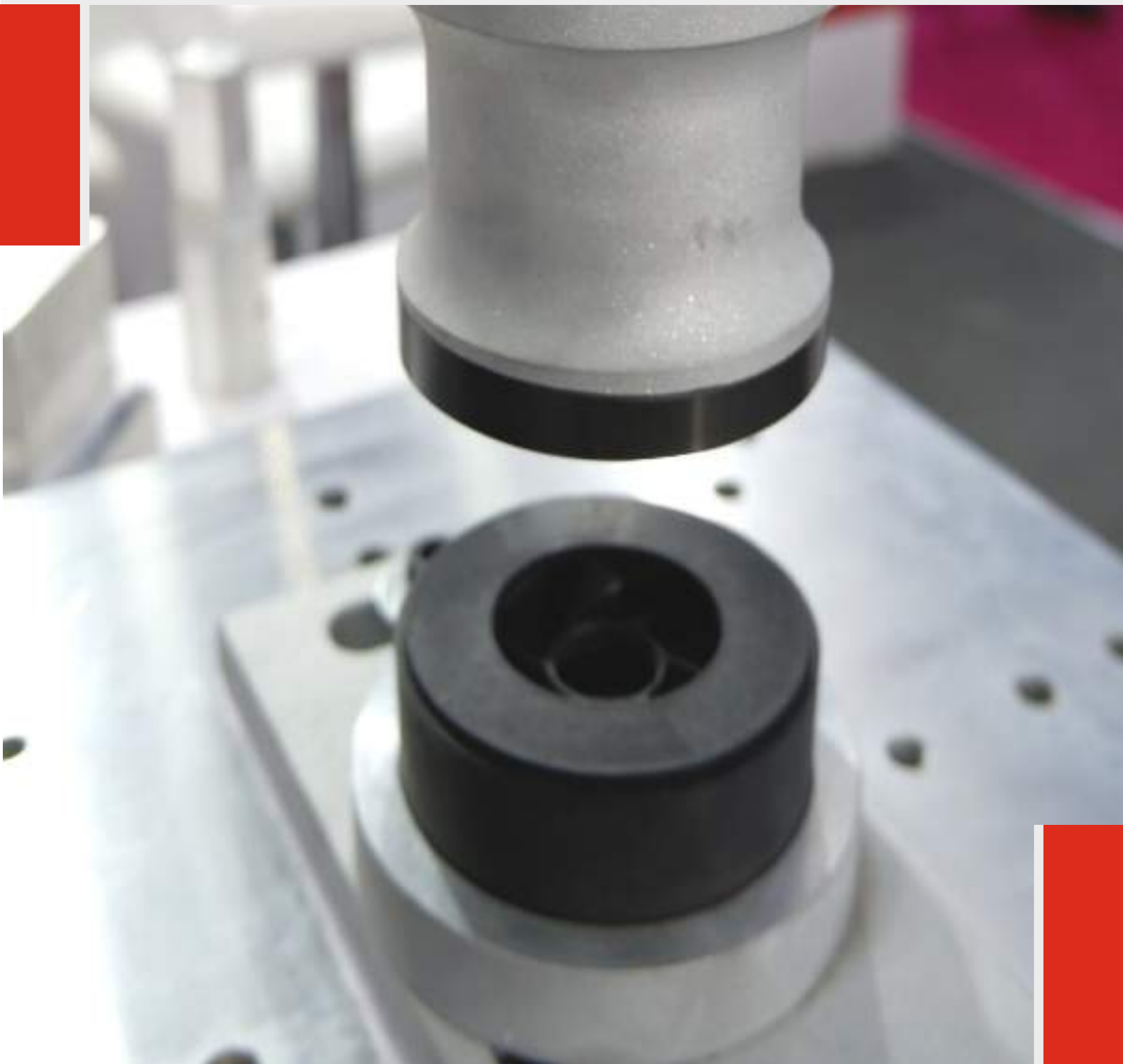


# ***Ultrasonic Plastic Welding Systems***



## ***Joining Of Thermoplastics***

**POWERHOUSE OF ULTRASONIC TECHNOLOGY<sup>®</sup>**



# Ultrasonic Solutions For Plastics Joining



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.

A standard ultrasonic welding unit comprises the following main components:

Electronic Ultrasonic Generator, Converter, Booster, Sonotrode, Pneumatic Press and Control Unit.



## Technical Specifications

	UHG-500/ 1000	WP 450-500/ 1000	WP 750-1000/ 1500	WP 3000-1000/1500/ 2000/3000/4500	WP 3000/6000- 3000/4500
Pneumatic Press		WP 450	WP 750	WP 3000	WP 3000
Closing Force Max	-	450 N	750 N	3000 N	3000/6000 N
Generator	HG-35-500/ 1000	WG-35-500/ 1000	WG-36-1000/ WG-20-1500	WG-20-1000/1500/2000/ /3000/4500	WG-15-3000/ 4500
Ultrasonic O/p Power (W)	500/1000	500/1000	1000/1500	1000/1500/2000/ 3000/4500	3000/4500
O/p Frequency (KHz)	20/35	35	20/36	20	15
Dimension- Press	Dia 54×220	300×500×490	360×575×1000	410×685×960	410×685×960
(WxDxH)mm Generator	500×350×220	93×365×278	510×440×220	510×440×220	510×440×220
Weight- Press	0.6/1.2	22	60	100	100
(Kg) Generator	15	7.2	13.8	13.8	13.8
Max. Stroke(mm)	-	50	100	100	100
Throat Depth(mm)	-	80	150	275	275
Working Table (WxD)mm		200×300	300×325	465×410	465×410

## Generator AWG 20

- Friendly GUI
- 7" Color touch screen
- Latest MCU controlled
- Compact design
- Frequency 20 kHz & 36 kHz
- Real time average & maximum power meter gauge
- Real time frequency monitoring
- Real time monitoring of faults & warnings messages & indications
- Inbuilt weld counters
- Up to 1000 W Power Output
- Dimensions - 155x405x335 mm
- All device parameters monitoring & configuration setup interface
- Programmable plastic welding machine control
- Pulse & continuous modes of operation
- Internal & external amplitude control option (50 – 100 %)
- Over current, over voltage & settable power overload protection
- Inbuilt RTC



## Generator WG 20



- Friendly GUI
- 7" colour TFT
- Latest MCU controlled
- Frequency 20 kHz & 36 kHz
- Amplitude regulated power system
- Fully automatic tuning & frequency control under all load conditions
- Built in circuit protection for all possible fault & load conditions
- Up to 4500 W Power Output
- Dimensions - 449x504x213 mm
- Screen dimension as 122mm x 95 mm (W x H)
- Modular construction with built in process-interface
- Clearly arranged front panel with display of the operational conditions.
- Electronic booster by means of electronically selecting amplitude - range of 100/90/80/70%

## Generator AWG 35

- Frequency 35 kHz
- Weld modes are time, energy, hand & actuator
- Ultrasonic power is 1000 W
- Various interfaces as local control (SPS), Web interface, Actuator control (direct) & RS 485
- Halt conditions are Max power, Max energy, Max time, Max temperature & Max distance
- 2.3" monochrome control and 15 key control
- 16 data set
- 230V & 50Hz Net input
- 1000W Ultrasonic converter
- Total weight is 3.5 Kg
- Dimensions as Rack mount: 106x128x446mm, 19 Rack, 21 TE/3TE, Panel mount: 96x110x530mm

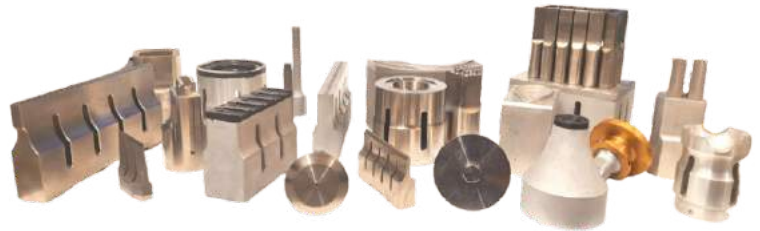


## Converter & Booster

- 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
- Titanium Booster
- 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

## Sonotrodes

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 horns, is our speciality.



## Control Unit (AWC 6)

- 7" Colour touch screen.
- Provides 4 different Trigger modes - Time, Force, Distance and Touch.
- Provides 5 different weld modes - Time, energy, Weld Distance, Absolute Distance and Maximum Power.
- Force Measurement.
- Energy, Distance Measurement and control.
- Variable pressure profile for more accurate Weld Results.
- Amplitude Profile to weld Few Semi- Crystalline Materials.
- Automatic Saving of last 99999 welding Results.
- User can store 50 different Job Settings. (Data set management)
- Selectable calibration pulse for Automatic Sonotrode Frequency Tuning.
- 6 Types of different quality windows
- In-built RTC and diagnostic mode
- Supports 7 different Generators and 5 different Presses.
- USB Interface for receiving Welding summary on PC.
- In-built Rotary Table Interface with Two Sensor Support.
- In-built cutting control controller system.
- In-built Pick and Place System Interface.
- Provides 4 User Programable Inputs and Outputs.



## Control Unit (MPS 1)

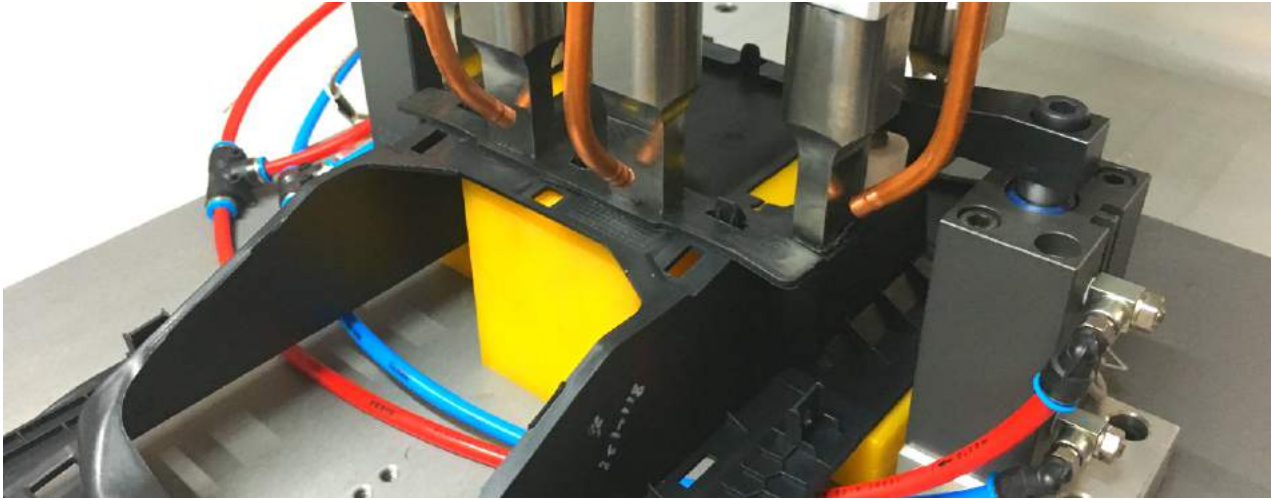
- Energy Mode option in addition to time mode allowing precise setting of energy as per job requirements.
- Precise time setting with least count of 0.001 second, thus avoiding over welding, deformation, reduction of production rate and excess consumption of power.
- Rotary Table - OFF/ON.
- Amplitude Control- 50-100%.
- Self diagnosis-microprocessor of system helps in calibration and quality control and also acts as a fault finding tool allowing operator to rectify the system.
- Automatic Turning of horn and horn life indication.
- Modular design of system allows easy capacity up-gradation.
- Calibration Pulse - ON/OFF.





## Customized solutions for complex projects

Special Purpose machines to meet specific customers requirement is one of our strong points. For many years, we have designed and built systems, which cater to the precise demands of the costumers.



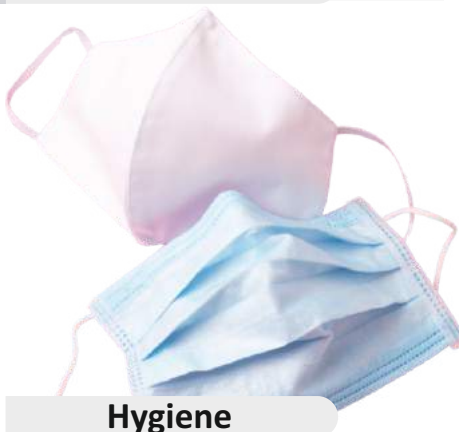
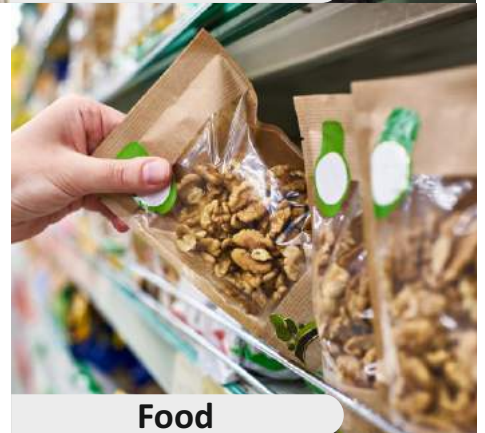
For Large/Complex components, system with multi converter design (with mother / daughter horns) are available as per specific requirements. Multi-converter units are frequently used in the welding of large area, asymmetrical parts, for example in automobile and apparatus engineering or with toys. The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



## Expertise Ultrasonic Solutions

### Unlimited Applications from A to Z in Plastic Welding Systems

- Automobile
- Clock / Watches
- Cosmetics
- Domestic Appliances
- Electronic equipment
- Energy Meters
- Furniture
- Lighting Equipment
- Mechanical Engg.
- Medical equipment
- Office equipment
- Optics
- Photography
- Precision mechanics
- Pump
- Radio-Tv
- Sound-Radio-Tv
- Sport goods
- Surgical
- Telecomm
- Textiles
- Teaching aids
- Toys
- Videos
- Zip Fasteners & Many more



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