



SONICS[®]
SONICS & MATERIALS, INC.

POWER

- 20 kHz — 500 Watts
- 40 kHz — 500 Watts

FEATURES

- Digital Amplitude Control
- Autotune Circuitry
- Programmable Time and/or Energy Welding Modes
- Converter Frequency Display

new MODELS

- 20 kHz *Time* - H520T/CV55
- 20 kHz *Time & Energy* - H520E/CV55
- 40 kHz *Time* - H540T/CVG54
- 40 kHz *Time & Energy* - H540E/CVG54

STANDARD FEATURES INCLUDE:

- Microprocessor Controlled
- Automatic Frequency Tuning
- Digital Amplitude Control
- Back Lit LCD Display
- Ultrasonics Load Meter Scale
- DB9 PLC I/O Connector
- Overload Protection Circuitry
- Overload Reset
- 10 ft. removable cable (other lengths available upon request)

Models H520/CV55 • H540/CVG54
**Hand Held Ultrasonic
Plastics Welding Systems**

with Time and/or Energy Welding Modes



20kHz
Model H520E/CV55



40kHz
Model H540E/CVG54

Leaders in the field of ultrasonic plastics welding equipment and technology since 1969, Sonics & Materials, Inc. offers two compact and portable 500 watt hand held welders for 20 kHz and 40 kHz frequencies.

These lightweight, yet rugged and reliable units are easy to operate and are designed specifically for welding, staking, inserting and spot welding applications. The hand held welders consist of an ultrasonic power supply and an ultrasonic hand held converter.

The 20 kHz hand held converter is supplied with a standard 1/2" (12.7mm) diameter flat-faced welding tip that attaches to an integral titanium front driver. This front driver has a 1/4-28 threaded end to accept other standard or custom tips.

The 40 kHz hand held converter is supplied with an 8 mm threaded titanium front driver for horn attachment. Horns are sold separately and are custom designed to customer requirements.

A variety of optional accessories, as well as standard threaded tips, are available as described on the reverse.

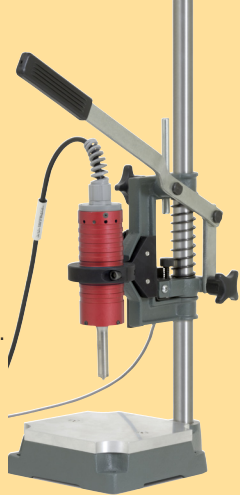


Optional Accessories Available for 20 kHz and 40 kHz Welders

Manual Press

A manual press is available for assembling parts where production volume does not justify automated equipment. The press provides more controlled motion of the converter than is possible when holding the converter by hand, resulting in more consistent assemblies. This unit includes adjustable cam switch actuation. An optional plug-in foot pedal is also available for foot switch activation (see below).

Order No. – SD-M501 for 20 kHz and 40 kHz



Stapler

A lightweight stapler attachment is available for the CV55 20 kHz hand held converter and is ideally suited for sealing

low production rate clamshell packages. The stapler is designed with a special pivoting mechanism that is attached to the converter. This mechanism contains a steel anvil that applies pressure to a small area on the flanged outer edge of the clamshell package. The anvil is supplied with two sealing patterns: a medium diamond knurl and a coarse diamond knurl. To switch from one sealing pattern to the other, the anvil is rotated 180°. **Order No. – CV00553 for 20 kHz (Converter with Stapler Attachment)**

Pistol Grip

A Pistol Grip is available for the model CV55 and CVG54 hand held converters and is designed to provide more ergonomic handling of the unit for certain application demands. The Grip is a lightweight device that simply attaches to the converter and allows the operator to activate the ultrasonics by pulling on the “trigger.” **Order No. – 681-0026**



Foot Pedal

A plug-in foot pedal is available for “ultrasonics on” triggering as opposed to triggering the ultrasonics by hand with the paddle on the side of the converter.

Order No. – 830-00004

Ultrasonic Hand Held Welder Specifications

Model H520T/E (20 kHz) & Model H540T/E (40 kHz) Power Supplies

Input Voltage:

- **Standard** 120 volts (specify H520-110 or H540-110), 50/60 Hz, regulated between 95-135 volts
- **Optional** 220 volts (specify H520-220 or H540-220), 50/60 Hz, regulated between 190-265 volts

Dimensions: 8.5 in. H x 13.5 in. W x 7.5 in. D (216 mm H x 340 mm W x 190 mm D)

Weight: 13 Lbs. (5.9 kg)

Model CV55 & Model CVG54 Hand Held Converters

	MODEL CV55	MODEL CVG54
Dimensions:	1.9 in. (48.3 mm) D x 7.6 in. (193 mm) L (with standard tip)	1.9 in. (48.3 mm) D x 6.3 in. (160 mm) L (without horn)
Weight:	1.5 lbs. (0.68 kg)	1.5 lbs. (0.68 kg)
Horn:	Titanium, Integral with threaded end to accept replaceable tips	Titanium or aluminum, quoted separately
Tip:	Standard 1/2" (12.7 mm) diameter flat faced titanium tip (see chart for other tip configurations)	N/A

Staking/Spot Welding Tips Specifications

Standard threaded tips available for staking, spot welding, and inserting are listed below. Special carbide coated wear resistant, flat, knurled, and custom faced tips are also available upon request.

Tip Assortment Kit (20 kHz only)

This kit contains 6 spot welding tips, 6 staking tips, 6 overweight tips, 3 male knurled coarse tips, 3 male knurled fine tips, 3 inserting tips and 2 flat tips. Tips have 1/4-28 threaded stud and can be used on 1/2" diameter front drivers.

Order No. - #631-0100

SPOT WELDING TIPS		
Material Thickness	TIP CODE	LETTER
Inches	MM	
1/32	0.793	SA
3/64	1.190	SB
1/16	1.587	SC
5/64	1.984	SD
3/32	2.381	SE
7/64	2.778	SF

INSERTING

SAE		METRIC			
Insert Size	Inside Diameter of Insert	Pilot Diameter of Tip	Insert Size	Inside Diameter of Insert	Pilot Diameter of Tip
4-40	0.088	0.078	2.5 x 0.45	0.079	0.069
6-32	0.106	0.096	3 x 0.5	0.097	0.087
8-32	0.133	0.123	3.5 x 0.6	0.114	0.104
10-24	0.147	0.137	4 x 0.7	0.129	0.119
10-32	0.160	0.150	5 x 0.8	0.165	0.155
1/4-20	0.200	0.190	6 x 1	0.195	0.185
1/4-28	0.211	0.201	8 x 1.25	0.265	0.255
5/16-18	0.262	0.252			

For more information on ultrasonic staking, spot welding, and insertion, request the following data sheets:

“Ultrasonic Staking and Spot Welding of Thermoplastic Assemblies”, and/or “Ultrasonic Installation of Inserts in Thermoplastic Components”.

Ordering Information

Specify tip required using code letter.

Example:

Staking tip “A” indicates a tip used for staking a 1/32 in. solid boss with a high profile flared head.

Spot welding tip “SA” indicates a tip used for spot welding 1/32 in. thick material.

STAKING TIPS

Plastic Boss Diameter	TIP CODE LETTER							
	Solid Boss Flare Head				Conical Boss Spherical Head			
	High Profile		Low Profile		High Profile	Low Profile		
Inches	MM	Tip Size	Stud Height	Tip Size	Stud Height	High Profile	Low Profile	Hollow Boss
1/32	0.793	A	.050	G	.019	AA	GG	-
1/16	1.587	B	.100	H	.0375	BB	HH	-
3/32	2.381	C	.150	I	.056	CC	II	-
1/8	3.175	D	.200	J	.075	DD	JJ	R
5/32	3.969	E	.250	K	.094	EE	KK	S
3/16	4.762	F	.300	L	.112	FF	LL	T