

**SONICS**<sup>®</sup>  
SONICS & MATERIALS, INC.

**vibra<sup>™</sup>cell**



# TABLE OF CONTENTS

## **A** Sonics

Pg. 1-2 Introduction

## **B** Large volume ultrasonic liquid processors (200µl – 1L volumes)

Pg. 3 750 watt system

Pg. 4 500 watt system

Pg. 5-13 Accessories for 750 and 500W systems

## **C** Small volume ultrasonic liquid processors (200µl – 150mL volumes)

Pg. 14 130 watt systems

Pg. 15 50 watt system

Pg. 16-17 Accessories for 130 and 50W systems

## **D** Production volume ultrasonic liquid processors (1L – 50L volumes)

Pg. 18-19 1500 watt system and accessories

Pg. 20-22 2000 watt system and accessories

Pg. 23 2500 watt system

## **E** OEM

Pg. 24 Ultrasonic components

Pg. 25 OEM Evaluation Kit



**Dear Colleague,**

At Sonics, we believe that technological innovation and collaboration are the cornerstones on which to build a better product. We are research driven, and continually refine and broaden our product line by aggressively investing in R&D and working closely with laboratory and production personnel around the globe. The instruments displayed in this catalog are the product of that synergy.

On behalf of all of us at Sonics, I would like to take this opportunity to thank each and every one of our customers for their trust in our ability to meet their needs. We sincerely appreciate your loyalty and continued support.

Robert Soloff, CEO  
Lauren Soloff, President



Vibra-Cell™ is the only ultrasonic processor that is backed by a **three-year warranty** that covers both parts and labor. In the unlikely event that your instrument should require servicing within that period, it will be repaired free of charge.



Sonics headquarters and manufacturing facility in Newtown, CT, USA.



# OVER 50 YEARS OF ULTRASONIC EXPERIENCE

## POWER SUPPLY



An ultrasonic processor has three main components:  
**Power supply, Converter and Probe** (also known as a horn).

The ultrasonic electronic power supply transforms AC line power to high frequency electrical energy. The power supply has a control panel allowing adjustment of several parameters including time and amplitude.

## CONVERTER



The power supply delivers high voltage pulses of energy at 20 kHz to drive a piezoelectric converter. A high voltage cable connects the converter to the power supply. The converter transforms electrical energy to mechanical vibration.

## PROBE/HORN



This vibration is amplified based upon the shape of the probe and transmitted down its length, into the liquid sample. Probes attach to the converter via a threaded stud. During operation, the probe is resonating, meaning that it is expanding and contracting longitudinally. The movement of the probe is controlled by the amplitude setting. The effective amplitude setting must be determined through empirical testing by the end user.

## CHOICE OF ULTRASONIC PROCESSING METHODS:

### PROBE SONICATION

Immersing a probe directly into a beaker or vessel is the most common way to process a sample. High intensity ultrasonic energy is transmitted directly into the liquid, causing cavitation and processing the sample quickly and effectively. Several probe options and accessories are available to handle a variety of applications and sample volumes. Probes are made from a titanium alloy (Ti-6Al-4V) due to many factors including its acoustical properties.



### CUP HORN PROCESSING

The cup horn can process multiple sealed tubes or vessels at one time without contact with an ultrasonic probe. This technique is often described as a high intensity ultrasonic bath. Cup horns are recommended when working with very small volumes or infectious materials because foaming and aerosolization are eliminated. The ultrasonic energy is transmitted from the horn, up through the water and into a vessel or multiple sample tubes.





# VCX 750

750 Watts

Processing Volume: 200µl – 2L\*

The **VCX 750** is a powerful and versatile ultrasonic liquid processor.

Using a variety of accessories, the system can process a wide range of sample types and volumes for many different applications.

The **VCX 750** is microprocessor based and programmable. Intuitive screens are user friendly and easy to navigate. The 750 watt power supply has the capability of operating our largest assortment of horns and accessories.

A standard ½" diameter probe with replaceable tip is included and many optional accessories are available to meet the needs of most any application.

## FEATURES:

- Programmable
- Variable power output
- 10 hour timer
- Pulse mode
- Wattage and Energy display
- Temperature monitoring
- Energy setpoint



(stand is optional)

Ordering information: Model no. **VCX 750**  
750 watt ultrasonic processor with ½" diameter probe and tool kit.

## SPECIFICATIONS

Power Output	750 watt maximum	Converter Cable	Part #201-0300
Frequency	20kHz	Length	6 ft. (1.8m)
Dimensions	H x W x D: 9.25 x 7.5 x 13.5" (235 x 190 x 340mm)		
Ultrasonic Converter	Part #CV334	Tool Kit	Part #381-0005
Diameter	2.5" (64mm)		Includes: 2 spanner wrenches and 1 open-end wrench
Length	7.25" (183mm)		
Standard Probe	Part #630-0220	Optional:	
Tip Diameter	0.5" (13mm) with replaceable tip	Stand with Clamp	Part #830-00459
Length	5.5" (139mm)	Sound Enclosure	Part #830-00427
Material	Ti6Al4V titanium alloy	Temperature Probe	Part #830-00060

\*The actual processing volume of a specific probe or accessory is application specific.



# VCX 500

500 Watts

Processing Volume: 200µl – 1L\*

The **VCX 500** offers 500 watts of power to handle a range of liquid processing applications. This model shares the same microprocessor based operating system and programming screens as the VCX750 system.

This model offers the same programmability as larger **VCX** versions.

A standard ½" diameter probe with replaceable tip is included and many optional accessories are available to meet the needs of any application.

## FEATURES:

- Programmable
- Variable power output
- 10 hour timer
- Pulse mode
- Wattage and Energy display
- Temperature monitoring
- Energy setpoint



Ordering information: Model no. **VCX 500**  
500 watt ultrasonic processor with ½" diameter probe and tool kit.

(stand is optional)

## SPECIFICATIONS

Power Output	500 watt maximum	Converter Cable	Part #201-0300
Frequency	20kHz	Length	6 ft. (1.8m)
Dimensions	H x W x D: 9.25 x 7.5 x 13.5" (235 x 190 x 340mm)		
Ultrasonic Converter	Part #CV334	Tool Kit	Part #381-0005
Diameter	2.5" (64mm)		Includes: 2 spanner wrenches and 1 open-end wrench
Length	7.25" (183mm)		
Standard Probe	Part #630-0220	Optional:	
Tip Diameter	0.5" (13mm) with replaceable tip	Stand with Clamp	Part #830-00459
Length	5.5" (139mm)	Sound Enclosure	Part #830-00427
Material	Ti6Al4V titanium alloy	Temperature Probe	Part #830-00060

\*The actual processing volume of a specific probe or accessory is application specific.



# PROBE OPTIONS FOR 750 AND 500 WATT SYSTEMS

## PROBES

Probes (sometimes referred to as horns) are attachments that act as mechanical amplifiers to increase the amplitude of vibration generated by the converter.



**TIP DIAMETER**  
1/2" (13mm)

**PART NO.**  
630-0220  
Threaded End  
630-0219  
Solid

**VOLUME**  
50-250mL

**AMPLITUDE**  
115µm



**TIP DIAMETER**  
3/4" (19mm)

**PART NO.**  
630-0207  
Threaded End  
630-0208  
Solid

**VOLUME**  
100-500mL

**AMPLITUDE**  
60µm



**TIP DIAMETER**  
1" (25mm)

**PART NO.**  
630-0210  
Threaded End  
630-0209  
Solid

**VOLUME**  
200-1,000mL

**AMPLITUDE**  
35µm

When driven at its resonant frequency, the probe expands and contracts longitudinally about its center. The distance the probe moves is measured as the amplitude. The greater the mass ratio between the upper section and the lower section, the greater the amplification factor, and the greater the peak-to-peak excursion at the tip of the probe. The amplitude setting can be adjusted on the power supply.

Probes with smaller tip diameters produce greater intensity of cavitation, but the energy released is restricted to a narrower, more concentrated field. Conversely, probes with larger tip diameters produce less intensity, but the energy is released over a greater area. The larger the tip diameter, the larger the volume that can be processed, but at lower intensity.



High gain probes produce higher intensity than standard probes of the same diameter and are recommended for processing difficult samples. Probes are fabricated from a high-grade titanium alloy (Ti-6Al-4V) because of its high tensile strength, good acoustical properties at ultrasonic frequencies, high resistance to corrosion, low toxicity and excellent resistance to cavitation erosion. They are autoclavable and available with threaded ends to accept replaceable tips, microtips and extenders. Probe tips will pit or erode over time and will need to be replaced. Replaceable tip probes are used with aqueous samples only. Solid probes can be used with all sample types including aqueous samples, organic solvents and low surface tension liquids. Contact Sonics for help selecting the proper probe or tip.

## REPLACEABLE TIPS

Standard 1/2", 3/4" and 1" probes are available with replaceable tips for use with water based samples. During use, tips erode and become less effective over time. A worn tip is easily removed and replaced.

**PART NO.**  
630-0406

**TIP DIAMETER**  
1/2" (13mm)

**PART NO.**  
630-0407

**TIP DIAMETER**  
3/4" (19mm)

**PART NO.**  
630-0408

**TIP DIAMETER**  
1" (25mm)



## TAPERED MICROTIPS

Two types of microtips are available to enable processing of samples in small vessels or tubes – a tapered microtip and a stepped microtip. The tapered microtip screws into the threaded end of the standard 1/2" (13 mm) probe in place of the replaceable tip. This combination is capable of generating very high amplitudes.

### TIP DIAMETER

1/16" (2mm)

### PART NO.

630-0417

### VOLUME

0.2-5mL

### MAX

### AMPLITUDE %

40

### AMPLITUDE

170µm



### TIP DIAMETER

1/8" (3mm)

### PART NO.

630-0418

### VOLUME

1-15mL

### MAX

### AMPLITUDE %

40

### AMPLITUDE

200µm



### TIP DIAMETER

3/16" (5mm)

### PART NO.

630-0419

### VOLUME

5-20mL

### MAX

### AMPLITUDE %

65

### AMPLITUDE

210µm



### TIP DIAMETER

1/4" (6mm)

### PART NO.

630-0420

### VOLUME

10-50mL

### MAX

### AMPLITUDE %

75

### AMPLITUDE

180µm



Tapered microtips attach to standard 1/2" probe (#630-0220).



**CAUTION:** Do not exceed the maximum amplitude limits. Operating above the limit may cause the microtip to fracture. Do not use a tapered microtip with a coupler.

## STEPPED MICROTIPS

The stepped microtip assembly consists of two parts, the coupler and the microtip. The coupler screws into the converter in place of the standard probe and due to the reduced diameter, it is capable of reaching into narrow, long necked vessels. The stepped microtip assembly can deliver lower amplitudes and is advantageous when processing samples under 1mL.

### COUPLER

### PART NO.

630-0421



### TIP DIAMETER

1/16" (2mm)

### PART NO.

630-0423

### VOLUME

0.2-5mL

### MAX

### AMPLITUDE %

40

### AMPLITUDE

110µm



### TIP DIAMETER

1/8" (3mm)

### PART NO.

630-0422

### VOLUME

1-15mL

### MAX

### AMPLITUDE %

40

### AMPLITUDE

110µm



### TIP DIAMETER

1/4" (6mm)

### PART NO.

630-0435

### VOLUME

10-50mL

### MAX

### AMPLITUDE %

40

### AMPLITUDE

80µm



Stepped microtips attach to the coupler (#630-0421).



## EXTENDERS

Extenders screw into threaded end probes of the identical diameter in place of the replaceable tip. Extenders are recommended when working with tall, narrow vessels such as Erlenmeyer flasks and add 5" of length to a standard probe.



**PART NO.**  
630-0410

**SIZE**  
1/2" (13 mm) diameter  
5" (127 mm) long.

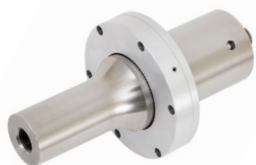
**PART NO.**  
630-0409

**SIZE**  
3/4" (19 mm) diameter  
5" (127 mm) long

**PART NO.**  
630-0444

**SIZE**  
1" (25 mm) diameter  
5" (127 mm) long

Longer extenders are available upon request.



**PART NO.**  
BHN294T21

## BOOSTER

When connected between the converter and the probe, the booster acts as a mechanical amplifier that increases the amplitude of vibration by a factor of 2. The booster is compatible with the 3/4" and 1" standard probes. Boosters cannot be used with 1/2" probes.

## HIGH GAIN PROBES

High gain probes offer twice the amplitude when compared to standard probes of the same diameter and attach directly to the converter. High gain probes are not compatible with boosters.

**TIP DIAMETER**  
3/4" (19mm)

**PART NO.**  
630-0306

**TYPE**  
Solid

**VOLUME**  
100-500mL

**AMPLITUDE**  
115µm



**TIP DIAMETER**  
1" (25mm)

**PART NO.**  
630-0310

**TYPE**  
Solid

**VOLUME**  
200-1,000mL

**AMPLITUDE**  
65µm



## DUAL PROBE

The dual probe assembly enables a single ultrasonic processor to process two (25-500 mL) samples simultaneously. The assembly consists of an aluminum primary horn **PART NO. 630-0562** and two 3/4" (19 mm) solid probes **PART NO. 630-0208**. Center to center dimension between the probes is 4 1/2" (114 mm).

When used with a 750 watt ultrasonic processor, the dual probe is capable of delivering up to 375 watts per probe, meeting all EPA requirements specified in SW-846 method 3550.



**PART NO.**  
630-0525



# MULTI ELEMENT PROBES

The high throughput multi-element probes increase productivity and minimize repetitive tasks by processing numerous samples simultaneously. Units are available with 4, 8, 16 and 24 tips and are compatible with either the 500 or 750 watt systems. Custom formatted multi-element probes are available upon request. The replacement tips are Part no. 630-0660.

**4-ELEMENT**



**PART NO.**  
630-0559

**8-ELEMENT**



**PART NO.**  
630-0586

**16-ELEMENT**



**PART NO.**  
630-0699

**24-ELEMENT**



**PART NO.**  
630-0579

**TIP DIAMETER**  
1/8" (3mm)

**VOLUME**  
0.5-15mL

**AMPLITUDE**  
120µm

**TIP SPACE**  
18mm



**STAND PART NO.**  
830-00130

## HEAVY DUTY SUPPORT ASSEMBLY

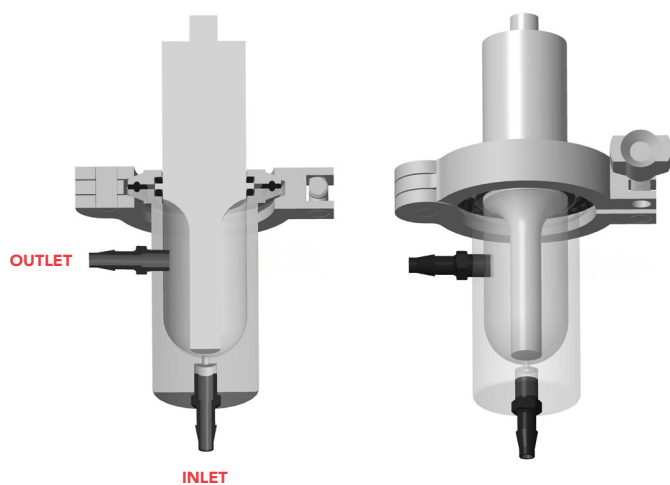
Supports the converter and multi-element probe with minimum deflection. Includes lab jack. Part no. 830-00130 is recommended when working with any multi-element horn.



# MEDIUM VOLUME CONTINUOUS FLOW CELL

The flow cell enables continuous processing of 1L or greater volumes. The process fluid enters through the inlet at the bottom of the unit. As it passes through the cavitation field, it is ultrasonically processed. The fluid exits the unit through an outlet port. The intensity and extent of processing are controlled by adjusting both the flow rate and amplitude setting.

A ½" (13mm) solid tip flow cell probe is included and the volume of liquid inside the chamber with the probe installed is 65 ml. A variable speed pump is recommended but not included.



**FLOW CELL ASSEMBLY**

**REPLACEMENT PROBE**



**PART NO.**  
630-0651



**PART NO.**  
630-0644

## FLOW CELL SPECIFICATION

Height: 9.1" (231mm)  
Diameter: 3.5" (89mm)  
Max flow rate: 0.5L/min.

Material: 316L stainless steel  
Internal volume w/probe: 65 mL  
Product/Coolant Connectors: hose barbs for ¼" ID tubing



# CUP HORN ASSEMBLY

The cup horn can process multiple sealed tubes or vessels at one time without contact with an ultrasonic probe. This method eliminates cross contamination, sample foaming, overheating and aerosolization which can all occur when using a probe. Most importantly the cup horn enables samples under 200µl to be effectively processed.

**VCX500 WITH  
CUP HORN, CHILLER,  
ENCLOSURE PACKAGE**

**PART NO.  
VCX500CCE**



**CUP HORN  
ACCESSORY**

**PART NO.  
630-0731**



The cup horn is attached to the converter in place of a probe, and filled with water. Microtubes containing samples are placed inside using specially designed tube holders. Ultrasonic energy is transferred through the water and into the sample tubes. Multiple tube holders are available for various size tubes and vessels. Both types of 1.5mL tube holders shown below are included.

Inlet and outlet ports enable cold water to be circulated within the cup, inhibiting heat build up during extended operation. Use of the chiller is highly recommended and due to the high noise level created by the cup horn, a sound abating enclosure is required.

Note: Selecting the appropriate size and type of sample tube will greatly improve results. Contact Sonic's for application assistance.

**HOLDER FOR (8) 1.5ML  
POLYSTYRENE TUBES**



**PART NO.  
830-00247**

**HOLDER FOR (8) 1.5ML  
POLYPROPYLENE TUBES**



**PART NO.  
830-00248**

**HOLDER FOR  
15ML TUBE**



**PART NO.  
529-0029**

**HOLDER FOR  
50ML TUBE**



**PART NO.  
529-0030**



# CHILLER



Ultrasonic processing generates heat which may be detrimental to many applications. The chiller automates the cooling process with a 400W cooling capacity and controls temperature from 5-45°C.

**TWO MODELS ARE AVAILABLE.**



The chiller model no. **830-00905** is compatible with the **cup horn** system and does not include an internal reservoir to hold water. This model recirculates and chills the water inside the cup horn. This feature is important because it maintains a constant water level which greatly improves sample processing. A tubing and connector set is available to link the components and is ordered separately as model no. **309-4911**.



The chiller model no. **830-00906** includes a 300mL internal water reservoir which enables it to be connected to any device that requires an external cooling system. This is the recommended chiller model for use when cooling the water jacket on a high volume **flow cell**. This unit can also be attached to the inlet and outlet of a jacketed vessel for cooling.

## SPECIFICATION

Cooling capacity:	400 watts
Voltage:	115-230 VAC
Dimensions:	13" x 11" x 13" (32 x 28 x 32 cm)
Flow rate:	1 Lpm

Weight:	28 lbs. (12.7 kg)
Fittings:	1/4" female CPC quick connect
Operating range:	5 - 45 degrees C
Interface:	RS232



# GENERAL ACCESSORIES FOR 750-500W



## SOUND ABATING ENCLOSURE

Ultrasonic processing produces high pitched noise, which originates from the vessel walls and the liquid surface. The sound enclosure reduces the noise to comfortable levels. A support rod and converter clamp are included. Access ports are available on both sides and the top of the enclosure.

**OUTSIDE DIMENSIONS:**  
(H x W x D) 30.5" x 13.5" x 13"  
(775 x 343 x 330 mm)

**INSIDE DIMENSIONS:**  
(H x W x D) 29" x 12.5" x 12"  
(737 x 318 x 305 mm)

**PART NO.**  
830-00427



**PART NO.**  
830-00459

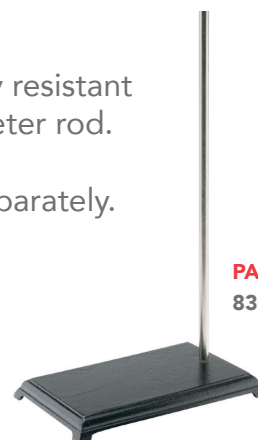
## SUPPORT STAND WITH CLAMP

Securely support the ultrasonic processor with a chemically resistant plastic holder on a 5.5" x 9" cast-iron base with 0.5" diameter rod.

The converter clamp and support stand can be ordered separately.



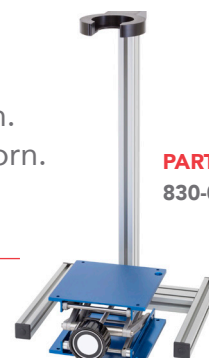
**PART NO.**  
830-00116



**PART NO.**  
830-00109

## HEAVY DUTY SUPPORT ASSEMBLY

Supports the converter and multi-element probe with minimum deflection. Includes lab jack. Recommended when working with any multi-element horn.



**PART NO.**  
830-00130



## LABORATORY JACK

Provides adjustable elevation from 2 1/2" (64 mm) to 10" (254 mm). Top plate: 6" x 6" (152 x 152 mm).

**PART NO.**  
830-00113

## ROSETTE GLASS COOLING CELLS

The rosette is a glass cell that enables uniform treatment at low temperatures. Fill the rosette with your liquid sample and place it in an ice bath. The ultrasonic energy forces the sample to circulate under the probe and through the cooling arms.



300mL Rosette

**PART NO.**  
830-00001

30mL Rosette

**PART NO.**  
830-00003



## JACKETED BEAKERS

The jacketed beaker is attached to a chiller or another cold water source. The chilled water is circulated around the liquid within the beaker maintaining the desired sample temperature.

10 mL cooling cell  
with water jacket

**PART NO.**  
830-00009

100 mL cooling cell  
with water jacket

**PART NO.**  
830-00010

## TEMPERATURE PROBE

Enables temperature monitoring from 1 – 100°C.

**PART NO.**  
830-00060



## REPLACEMENT CONVERTER



**PART NO.**  
CV334

## REPLACEMENT CONVERTER CABLE

6' (1.8m) length

**PART NO.**  
201-0300



## REPLACEMENT WRENCH SET

The 750 and 500W ultrasonic processors include 2 spanner wrenches and a  $\frac{9}{16}$ " x  $\frac{7}{16}$ " open end wrench.



**PART NO.**  
381-0005

## HAND HELD FREQUENCY METER

Check the frequency of energized probes, converters and boosters  
Frequency range:  
10.00 kHz - 80.00 kHz



**PART NO.**  
833-00012

## FOOTSWITCH

For hands-free operation with 10' (3m) cable.

**PART NO.**  
830-00004





# VCX 130

130 Watts

Processing Volume: 200µl – 150mL\*

The **VCX 130** is a 130 watt, programmable ultrasonic processor and our most popular small volume system.

This model offers the same programmability as larger **VCX** versions.

The 1/4" probe (10 – 50ml volumes) is included and a variety of accessories are available for various applications and sample volumes.

## FEATURES:

- Programmable
- Pulse mode
- 10 hour timer
- Variable power output
- Wattage and Energy display



(stand is optional)

Ordering information: Model no. **VCX 130**  
130 watt ultrasonic processor with 1/4" diameter probe and tool kit.

## SPECIFICATIONS

Power Output	130 watt maximum	Converter Cable Length	Permanently attached 5 ft. (1.5m)
Frequency	20kHz		
Dimensions	H x W x D: 4.5 x 9.75 x 12.5" (115 x 250 x 320mm)		
Ultrasonic Converter	Part #CV18	Tool Kit	Part #888-00056 open end wrench (2 included)
Diameter	1.25" (32mm)		
Length	5.75" (146mm)		
Standard Probe	Part #630-0435	Optional:	
Tip Diameter	1/4" (6mm)	Stand with Clamp	Part #830-00460
Length	5.4" (137mm)	Sound Enclosure	Part #830-00451
Material	Ti6Al4V titanium alloy		

\*The actual processing volume of a specific probe or accessory is application specific.



# VC 50

50 Watts

Processing volume: 200µl – 50mL\*

The **VC 50** is a small and compact 50 watt ultrasonic processor. The probe can be held by hand and ultrasonic energy is activated by turning the amplitude knob on the front panel.

The 1/8" probe (0.5 – 15mL volumes) is included and a variety of accessories are available for various applications and sample volumes.

## FEATURES:

- Compact design
- Variable power output
- Low cost



(stand is optional)

Ordering information: Model no. **VC 50**  
50 watt ultrasonic processor with 1/8" diameter probe and tool kit.

## SPECIFICATIONS

Power Output	50 watt maximum	Converter Cable Length	Permanently attached 5 ft. (1.5m)
Frequency	20 kHz		
Dimensions	H x W x D: 8 x 8 x 5" (203 x 203 x 127mm)		
Ultrasonic Converter Diameter	Part #CV18 1.25" (32mm)	Tool Kit	Part #888-00056 open end wrench (2 included)
Ultrasonic Converter Length	5.75" (146mm)		
Standard Probe Tip Diameter	#630-0422 1/8" (3mm)	Optional: Stand with Clamp	Part #830-00460
Standard Probe Length	5.4" (137mm)	Sound Enclosure	Part #830-00451
Standard Probe Material	Ti6Al4V titanium alloy		

\*The actual processing volume of a specific probe or accessory is application specific.



# ACCESSORIES FOR 130 AND 50 WATT SYSTEMS

## PROBE OPTIONS

Probes amplify and radiate the ultrasonic energy into the sample. All probes are fabricated from titanium alloy Ti-6Al-4V and are autoclavable. Each ultrasonic processor includes a standard probe which can be substituted for a different size or accessory if requested.

**TIP DIAMETER**

5/64" (2mm)

**PART NO.**  
630-0423

**VOLUME**  
0.2-5mL

**AMPLITUDE**  
135µm

**TIP DIAMETER**

1/8" (3mm)

**PART NO.**  
630-0422

**VOLUME**  
0.5-15mL

**AMPLITUDE**  
170µm

**TIP DIAMETER**

1/4" (6mm)

**PART NO.**  
630-0435

**VOLUME**  
10-50mL

**AMPLITUDE**  
120µm

**TIP DIAMETER**

1/2" (12mm)

**PART NO.**  
630-0504

**VOLUME**  
50-150mL

**AMPLITUDE**  
45µm

Only for 130W models

## SUPPORT STAND WITH CLAMP

Securely support your ultrasonic processor with a chemically resistant plastic holder on a 5.5" x 9" cast-iron base with 0.5" diameter rod.

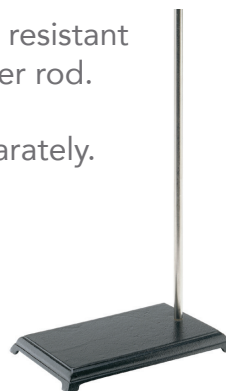
The converter clamp and support stand can be ordered separately.



**PART NO.**  
830-00460



**PART NO.**  
830-00118



**PART NO.**  
830-00109

## SOUND ABATING ENCLOSURE

Ultrasonic processing produces high pitched noise, which originates from the vessel walls and the liquid surface. The sound enclosure reduces the noise to comfortable levels. A support rod and converter clamp are included. Access ports are available on both sides and the top of the enclosure.

**OUTSIDE DIMENSIONS:**

(H x W x D) 20" x 12" x 12" (508 x 305 x 305 mm)

**INSIDE DIMENSIONS:**

(H x W x D) 18.5" x 11" x 11" (470 x 280 x 280 mm)



**PART NO.**  
830-00451

## FOOTSWITCH

For hands-free operation with 10' (3m) cable.



**PART NO.**  
830-00004

VCX 130 and VC 50 only



**PART NO.**  
**630-0602**

Only for 130W models

### EIGHT ELEMENT PROBE

The eight-element probe increases productivity and minimizes repetitive tasks by processing 8 samples simultaneously. Recommended for use in 96 well plates.

**SPACING BETWEEN TIPS**

1 $\frac{1}{32}$ " (9 mm)

**TIP LENGTH**

1 $\frac{1}{16}$ " (17 mm)

**TIP DIAMETER**

1 $\frac{1}{8}$ " (3 mm)

**PROCESSING VOLUME**

150-250 $\mu$ l



**PART NO.**  
**630-0608**

Only for VCX 130 model

### CUP HORN

The cup horn can process small samples in isolation without probe intrusion, removing the risk of cross contamination or aerosolization. This is especially useful when working with infectious materials.

The water-filled micro cup horn screws into the inverted converter in place of a probe. A tube containing the sample is placed inside the cup horn. The vibrations produced in the cup induce cavitation inside the tube. Inlet and outlet ports enable cooling water to be recirculated within the cup, inhibiting heat build-up during extended operation. A holder for 1.5mL tubes is included.

Outlet connects to 1/2" (13 mm) I.D. tubing.

Inlet connects to 3/8" (9.5 mm) I.D. tubing.

### ROSETTE GLASS COOLING CELLS

The rosette is a glass cell that enables uniform treatment at low temperatures. Fill the rosette with your liquid sample and place it in an ice bath. The ultrasonic energy forces the sample to circulate under the probe and through the cooling arms.



300mL Rosette

**PART NO.**  
**830-00001**

30mL Rosette

**PART NO.**  
**830-00003**



### JACKETED BEAKERS

The jacketed beaker is attached to a chiller or another cold water source. The chilled water is circulated around the liquid within the beaker maintaining the desired sample temperature.

10mL cooling cell  
with water jacket

**PART NO.**  
**830-00009**

100mL cooling cell  
with water jacket

**PART NO.**  
**830-00010**



# VCX 1500

1500 Watts  
Processing Volume: 1 – 10L\*

The **VCX 1500** is a reliable and durable choice for many applications. This model includes a 1" diameter, 10" long probe with a 100µm maximum amplitude.

A variety of probe options are available including the flow cell inline processing accessory. Electrical requirements are 220V, 50/60Hz, single phase, 20A.

## FEATURES:

- Programmable
- Variable power output
- 10 hour timer
- Pulse mode
- Wattage and Energy display
- Temperature monitoring
- Energy setpoint



Ordering information: Model no. **VCX 1500**

1500 watt ultrasonic processor with 1" diameter probe, booster and tool kit.

Note: Air cooling of the converter by a compressed air source is required. The user must provide approximately 10psi (4 cfm) of clean, dry air to prevent overheating of the ultrasonic processor.

## SPECIFICATIONS

Power Output	1,500 watt maximum	Booster (2:1)	Part #BHN294T21
Frequency	20kHz	Length	5" (129mm)
Dimensions	H x W x D: 7 x 15 x 18.25" (178 x 380 x 464mm)	Converter Cable	Part #201-0106
		Length	10' (3m)
Ultrasonic Converter	Part #CV294V	Tool Kit	Part #888-00054 spanner wrench (2 included)
Diameter	3" (76.2mm)		
Length	6.25" (159mm)		
Standard Probe	Part #630-0697	Optional:	
Tip Diameter	1" (25mm)	Stand with Clamp	Part #830-00461
Material	Ti6Al4V titanium alloy	Temperature Probe	Part #830-00060
		Sound Enclosure	Part #830-00474

\*The actual processing volume of a specific probe or accessory is application specific.



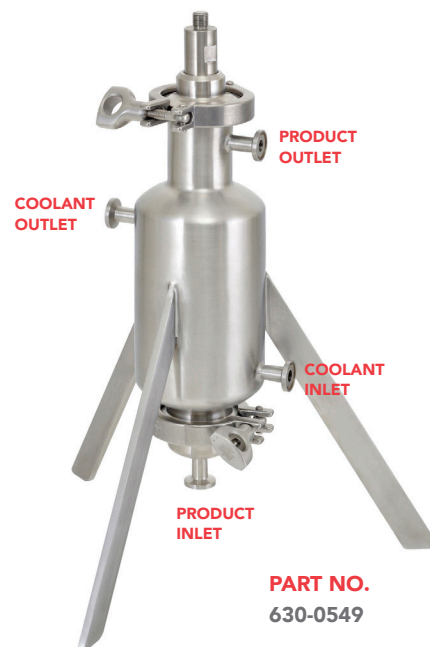
# VCX1500 FLOW CELL

Part no. 630-0549 Flow Cell is designed for continuous, flow-through ultrasonic processing of approximately 5–10L of material. Actual throughput and effective working volume are application-dependent and influenced by key process variables, including sample concentration, viscosity, and the required degree of ultrasonic treatment.

Process fluid enters the flow cell through the bottom inlet and flows past the probe tip, where ultrasonic cavitation is applied. The treated fluid then exits through the outlet port. The degree of processing is controlled by adjusting the sonication amplitude and the flow rate.

The flow cell includes a 1" (25 mm) diameter probe and features sanitary process connections. The assembly is designed for straightforward disassembly to facilitate cleaning and maintenance. This flow cell has an integrated water jacket to assist with cooling. External cooling may be required, depending on sample requirements.

**FLOW CELL WITH PROBE**



**FLOW CELL PROBE**



**PART NO. 630-0625**

**SOUND ENCLOSURE FOR VCX 1500**



(H X W X D) 38" X 18" X 17.75"  
(965 X 457 X 451 mm)

**PART NO. 830-00474**

## FLOW CELL SPECIFICATION

Height: 17" (432 mm)  
Width: 16" (406 mm)  
Weight: 12 lbs. (5.5 kg)

Material: 316L stainless steel  
Internal volume w/probe: 400 mL  
Product/Coolant Connectors: 1/2" (13 mm) sanitary fittings



# VCX 2000

2000 Watts  
Processing Volume: 5-20L\*

The **VCX 2000** is a reliable and durable choice for many applications. This model includes a 1" diameter, 10" long probe with a 90µm maximum amplitude.

A variety of probe options are available including the flow cell inline processing accessory. Electrical requirements are 220V, 50/60Hz, single phase, 20A.

## FEATURES:

- Programmable
- Variable power output
- 10 hour timer
- Pulse mode
- Wattage and Energy display
- Temperature monitoring
- Energy setpoint



Ordering information: Model no. **VCX 2000**

2000 watt ultrasonic processor with 1.5" diameter probe, booster and tool kit.

Note: Air cooling of the converter by a compressed air source is required. The user must provide approximately 10psi (5 cfm) of clean, dry air to prevent overheating of the ultrasonic processor.

## SPECIFICATIONS

Power Output	2,000 watt maximum	Booster (2:1)	Part #BHN294T21
Frequency	20kHz	Length	5" (129mm)
Dimensions	H x W x D: 7 x 15 x 18.25" (178 x 380 x 464mm)	Converter Cable	Part #201-0106
		Length	10' (3m)
Ultrasonic Converter	Part #CV294V	Tool Kit	Part #888-00054 spanner wrench (2 included)
Diameter	3" (76.2mm)		
Length	6.25" (159mm)		
Standard Probe	Part #630-0777	Optional:	
Tip Diameter	1.5" (38mm)	Stand with Clamp	Part #830-00461
Material	Ti6Al4V titanium alloy	Temperature Probe	Part #830-00060
		Sound Enclosure	Part #830-00474

\*The actual processing volume of a specific probe or accessory is application specific.



# VCX 2000 ACCESSORIES

The VCX 2000 system includes the 630-0777 probe. Two additional probes are available for both smaller or larger volumes.

PART NO.	TIP DIAMETER	PROBE LENGTH	PROCESSING VOLUME*
630-0697	1" (25mm)	10" (250mm)	1-10L
630-0777	1.5" (38mm)	10" (250mm)	5-20L
630-0702	1.5" (38mm)	15" (380mm)	10-25L

Note: processing volumes are application specific.



**PART NO.**  
630-0697

**PART NO.**  
630-0777

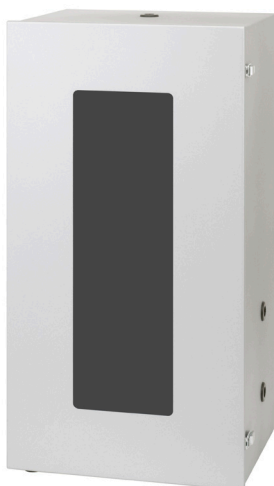
**PART NO.**  
630-0702

## OPTIONS:



**STAND WITH CLAMP**

**PART NO.**  
830-00461



**SOUND ENCLOSURE**

(H X W X D) 38" X 18" X 17.75"  
(965 X 457 X 451 mm)

**PART NO. 830-00474**



**TEMPERATURE PROBE**

**PART NO.**  
830-00060

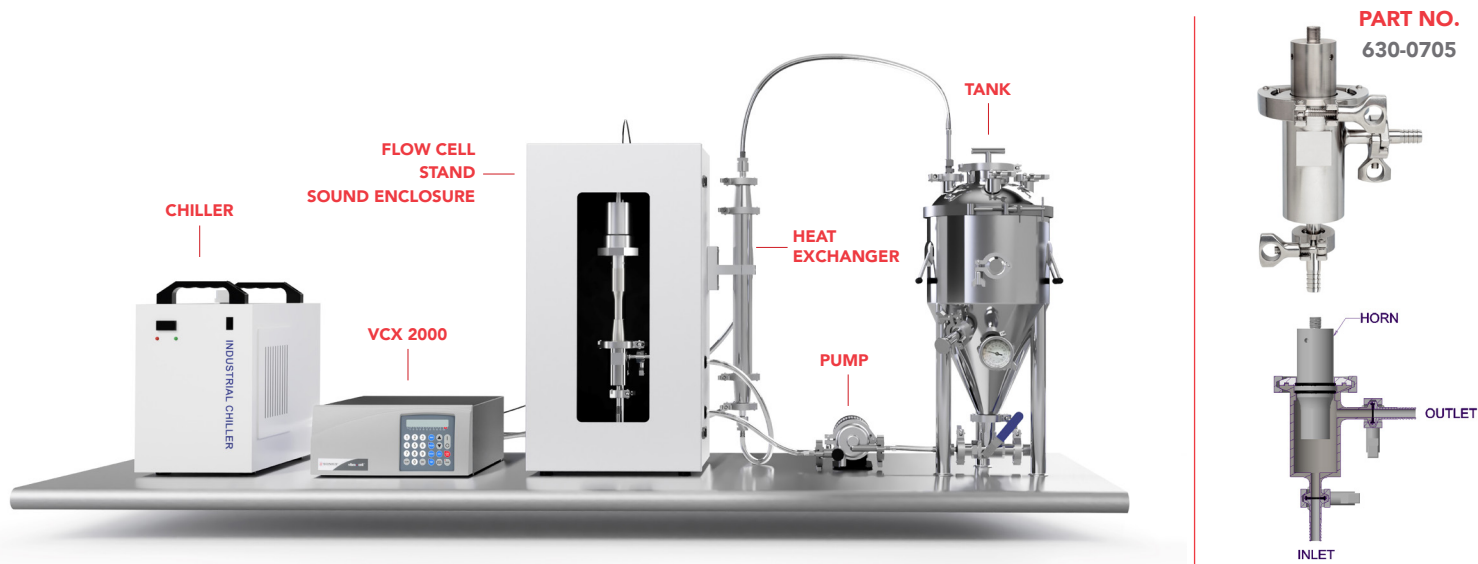


# VCX 2000 CONTINUOUS FLOW CELL

Part no. 630-0700 Flow Cell is designed for continuous, flow-through ultrasonic processing of approximately 10–50L\* of material. Actual throughput and effective working volume are application-dependent and influenced by key process variables, including sample concentration, viscosity, and the required degree of ultrasonic treatment.

Process fluid enters the flow cell through the bottom inlet and flows past the probe tip, where ultrasonic cavitation is applied. The treated fluid then exits through the outlet port. The degree of processing is controlled by adjusting the sonication amplitude and the flow rate.

The flow cell is equipped with a 1.5" (38 mm) diameter probe and features sanitary process connections. The assembly is designed for straightforward disassembly to facilitate cleaning and maintenance. Due to heat generated during ultrasonic operation, external cooling (e.g., a heat exchanger) is required. For safe operation, the flow cell assembly must be mounted on its stand and operated within a sound enclosure.



Part no. VCX-2000FP-220 includes the VCX 2000, chiller, flow cell, booster, probe, stand, sound enclosure and heat exchanger.

A pump, tank, and tubing are not included because the required specifications vary depending on the application. Customers should review their process requirements to select compatible components from local suppliers.

## FLOW CELL SPECIFICATION

Height: 9" (228 mm)  
Width: 6" (152 mm)  
Weight: 5 lbs. (2.2 kg)

Material: 316L stainless steel  
Internal volume w/probe: 110 mL  
Flow Cell Connections: 1/2" (13 mm) sanitary fittings



# VCX 2500

2500 Watts  
Processing Volume: 10 – 50L\*

The **VCX 2500** is our highest power system for the most difficult applications. This model includes a 1.5" diameter, 15" long probe with a 80µm maximum amplitude.

A variety of probe options are available including the flow cell inline processing accessory. Electrical requirements are 220V, 50/60Hz, single phase, 30A.

## FEATURES:

- Programmable
- Variable power output
- 10 hour timer
- Pulse mode
- Wattage and Energy display
- Temperature monitoring
- Energy setpoint



Ordering information: Model no. **VCX 2500**

2500 watt ultrasonic processor with 1.5" diameter probe, booster and tool kit.

Note: Air cooling of the converter by a compressed air source is required. The user must provide approximately 10psi (4 cfm) of clean, dry air to prevent overheating of the ultrasonic processor.

## SPECIFICATIONS

Power Output	2500 watt maximum	Booster (2:1)	Part #BHN294T21
Frequency	20kHz	Length	5" (129mm)
Dimensions	H x W x D: 9 x 17.5 x 28" (240 x 445 x 711mm)	Converter Cable	Part #201-0106
Ultrasonic Converter	Part #CV294V	Length	10' (3m)
Diameter	3" (76.2mm)	Tool Kit	Part #888-00054 spanner wrench (2 included)
Length	6.25" (159mm)	Optional:	
Standard Probe	Part #630-0702	Stand with Clamp	Part #830-00461
Tip Diameter	1.5" (38mm)	Temperature Probe	Part #830-00060
Material	Ti6Al4V titanium alloy		

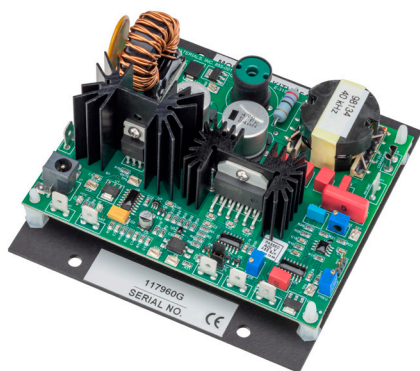
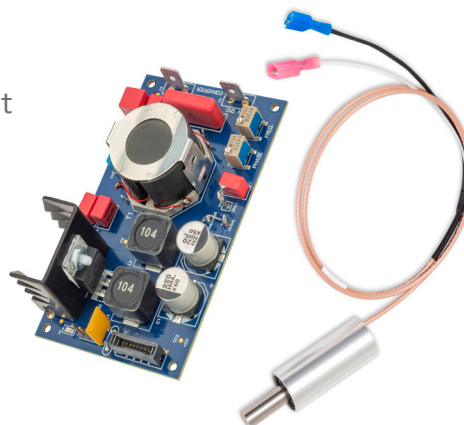
\*The actual processing volume of a specific probe or accessory is application specific.



Sonics offers a variety of miniaturized ultrasonic processor kits and accessories to serve the **OEM MARKET**. We assist a variety of customers in medical diagnostics, particle size analysis and other various industries. Circuit boards, converters and probes are available in different shapes, sizes and ultrasonic frequencies.

With over 50 years of experience, Sonics has built a solid reputation for high quality and reliable equipment. This expertise gives our customers the confidence to incorporate ultrasonics into many types of devices such as point of care diagnostic instruments.

Our engineering team is ready to discuss your application and if one of our many standard items does not solve the issue, we have the ability to customize as needed.



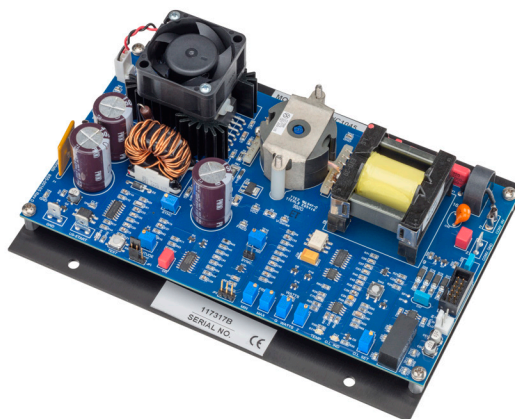
### 50 WATT ULTRASONIC BOARD (40KHZ)

(with mounting plate)

Overall dimension:  
4.75" W x 4.75" L x 2" H

4 Mounting holes - .200" (5mm):  
2.75" (70mm) x 3.45" (88mm)

**PART NO.**  
KITVC544



### 100 WATT ULTRASONIC BOARD (40KHZ)

(with mounting plate)

Overall dimension:  
5.5" W x 7.5" L x 2.3" H

4 Mounting holes - .156" (3.96mm):  
4.2" (106.68mm) x 7.2" (182.88mm)

**PART NO.**  
KITVC1044



# OEM EVALUATION KIT

Sonics is a world leader in ultrasonics for point-of-care diagnostic devices. Our OEM kits provide a compact and effective solution for chemical free cell lysis, dispersion and deagglomeration applications.

The Evaluation Kit enables you to quickly test feasibility of an ultrasonic processor without a large investment in integration time using individual components. The unit ships complete and is ready to use out of the box. Touch the probe against a cartridge or cuvette to see immediate results.

## FEATURES:

- Adjustable intensity
- Programable timer
- Wattage display
- Plug and play

## ADVANTAGES:

- Generate quick results
- Reduced set up time
- Reliable technology
- Customizable tip sizes

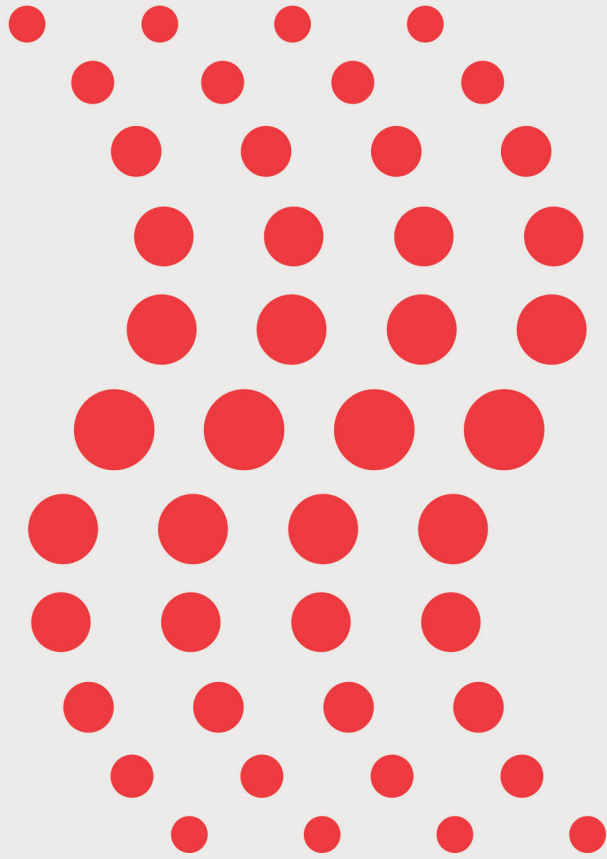


Sonics offers OEM kits ranging from 25 – 2,000 watts along with many probe options. Use this device for feasibility testing to determine the wattage/power needed for your specific application and enable us to select the proper size PCB required for the device in development.

**Ordering Information:** Model No. **VC-4030**  
100W ultrasonic power supply with converter.

## SPECIFICATIONS

Power Supply	Part #PS-VC4030	Ultrasonic Converter	Part #CV307
Power Output	100 Watt maximum	Case Diameter	32mm
Frequency	40 kHz	Converter Length	94mm
Dimensions	205mm (W) x 350mm (L) x 147mm (D)	Cable Length	760mm



sonics.com  
203.270.4600  
info@sonics.com

53 Church Hill Road  
Newtown, CT 06470



**SONICS**<sup>®</sup>  
SONICS & MATERIALS, INC.