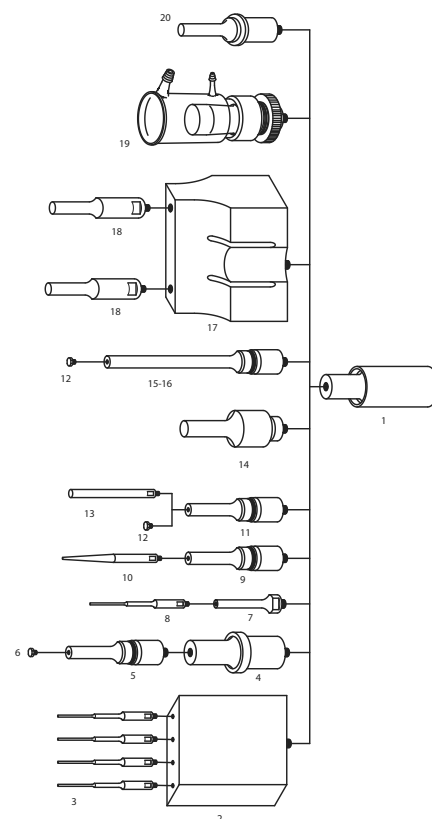


OPTIONAL ACCESSORIES FOR VC 505, VCX 500 AND VCX 750

The accessories and attachments described in this section are compatible with most 20 kHz ultrasonic processors. Please specify make, model, and connecting stud size ($\frac{1}{2}$ " - 20 or $\frac{3}{8}$ " - 24) when ordering.

NO.	DESCRIPTION	PART NO.
1	Converter Part No. CV 334*	CV00334
2	Multi-element coupler	See page 14
3	$\frac{1}{8}$ " (3 mm) stepped microtip	See page 13
4	Booster	BHNVC21
5	$\frac{1}{2}$ " (13 mm) solid probe	630-0219
	$\frac{1}{2}$ " (13 mm) probe with threaded end and replaceable tip*	630-0220
	$\frac{3}{8}$ " (19 mm) solid probe	630-0208
	$\frac{3}{8}$ " (19 mm) probe with threaded and replaceable tip	630-0207
	1" (25 mm) solid probe	630-0209
	1" (25 mm) probe with threaded and replaceable tip	630-0210
6	$\frac{1}{2}$ " (13 mm) replaceable tip	630-0406
	$\frac{3}{8}$ " (19 mm) replaceable tip	630-0407
	1" (25 mm) replaceable tip	630-0408
7	Coupler	630-0421
	Reverse coupler	630-0613
8	$\frac{5}{16}$ " (2 mm) stepped microtip	630-0423
	$\frac{1}{8}$ " (3 mm) stepped microtip	630-0422
	$\frac{1}{8}$ " (3 mm) low amplitude tapered microtip	630-0718
	$\frac{1}{4}$ " (6 mm) probe	630-0435
9	$\frac{1}{2}$ " (13 mm) probe with threaded end and replaceable tip	630-0220
10	$\frac{3}{8}$ " (19 mm) tapered microtip	630-0418
	$\frac{3}{16}$ " (5 mm) tapered microtip	630-0419
	$\frac{1}{4}$ " (6 mm) tapered microtip	630-0420
11	Probe – solid or with threaded end and replaceable tip – same as 5	
12	Replaceable tip – same as 6	
13	$\frac{1}{2}$ " (13 mm) half wave extender 5" (127 mm) long	630-0410
	$\frac{3}{8}$ " (19 mm) half wave extender 5" (127 mm) long	630-0409
	1" (25 mm) half wave extender 5" (127 mm) long	630-0444
14	$\frac{3}{8}$ " (19 mm) solid high gain probe	630-0306
	1" (25 mm) solid high gain probe	630-0310
15-16	$\frac{1}{2}$ " (13 mm) full wave probe solid 10" (254 mm) long	630-0217
	$\frac{1}{2}$ " (13 mm) full wave probe 10" (254 mm) long with threaded and replaceable tip	630-0218
17	Aluminum coupler*	630-0562
18	$\frac{3}{8}$ " (19 mm) solid probe	630-0208
19	2 $\frac{3}{4}$ " (70 mm) inside diameter cup horn	630-0431
20	$\frac{1}{2}$ " (13 mm) solid probe with flange at the nodal point	630-0603



* Supplied with standard equipment unless otherwise specified.

Caution: Do not use a tapered microtip with a coupler. Do not use a stepped microtip without a coupler. Observe microtip amplitude limits. Do not use a probe with threaded end and replaceable tip when processing samples containing organic solvents or low surface tension liquids. Use a solid probe instead. See caution on page 8.

PROBES

Probes (sometimes referred to as horns) are one-half wavelength long tools that act as mechanical transformers to increase the amplitude of vibration generated by the converter. They consist of two sections each having different cross-sectional areas. When driven at its resonant frequency, the probe expands and contracts longitudinally about its center. However, no longitudinal motion occurs at the threaded nodal point (area of no activity), allowing accessories to be connected to the probe at that point. 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. 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 usually recommended for processing difficult applications. Probes are fabricated from 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.

PROBES*

PART NO.	630-0220**	630-0219	630-0207**	630-0208	630-0210**	630-0209
TIP DIAMETER	½" (13 mm)	½" (13 mm)	¾" (19 mm)	¾" (19 mm)	1" (25 mm)	1" (25 mm)
TYPE	Threaded End	Solid	Threaded End	Solid	Threaded end	Solid
INTENSITY	High	High	Medium	Medium	Low	Low
VOLUME (batch)	50-250 ml	50-250 ml	50-500 ml	50-500 ml	100-1000 ml	100-1000 ml
AMPLITUDE*** micrometers	126	126	58	58	34	34
inches	.0050	.0050	.0022	.0022	.0013	.0013
LENGTH†	5½" (139 mm)	5½" (139 mm)	5" (127 mm)	5" (127 mm)	4⅓" (122 mm)	4⅓" (122 mm)

* Connecting stud ½ - 20. Available with ¾ - 24 stud to enable connection to a 20 kHz converter manufactured by another company.

** Do not use a probe with a replaceable tip when processing samples containing organic solvents or low surface tension liquids. Use a solid probe instead. See caution on page 8.

*** With the amplitude control set at 100%.

† Because ultrasonic probes are tuned to resonance, their length may vary slightly due to variations in the titanium's modulus of elasticity.

Note: With the amplitude control set at 100%, the amplitude at the converter tip is .0006 inch (16.5 micrometers).



HIGH GAIN PROBES*

PART NO.	630-0306**	630-0310**
TIP DIAMETER	¾" (19 mm)	1" (25 mm)
TYPE	Solid	Solid
INTENSITY	High	Medium
VOLUME (batch)	50-500 ml	100-1000 ml
AMPLITUDE*** micrometers	120	60
inches	.0047	.0023
LENGTH†	5⅜" (137 mm)	5⅝" (133 mm)

* Connecting stud ½ - 20. Available with ¾ - 24 stud to enable connection to a 20 kHz converter manufactured by another company.

** Do not use with a booster.

*** With the amplitude control set at 100%.

† Because ultrasonic probes are tuned to resonance, their length may vary slightly due to variations in the titanium's modulus of elasticity.

Note: With the amplitude control set at 100%, the amplitude at the converter tip is .0006 inch (16.5 micrometers).

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 coupler Part No. 630-0562 and two ¾" (19 mm) solid probes Part No. 630-0208.** Power delivered to each probe is identical, and is half the total power delivered by the power supply. Center to center dimension between the probes is 4½" (114 mm).

Connecting stud ½ - 20.*** Part No. 630-0525

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



* Custom three and four-element probes are available upon request.

** Two ½" (13 mm) solid probes can be substituted for the two ¾" (19 mm) solid probes. Probes can also be supplied with threaded end and replaceable tip, however these probes should not be used when processing liquids containing organic solvents or low surface tension liquids. See caution on page 8.

*** Available with ¾ - 24 connecting stud to enable connection to a 20 kHz converter manufactured by another company.