ACCESSORIES 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 ½", ¾" 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
½" (13mm)

PART NO.
630-0407

TIP DIAMETER
¾" (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 ½" (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 ½" 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
½" (13 mm) diameter
5" (127 mm) long.

PART NO.
630-0409

SIZE
¾" (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 ¾" and 1" standard probes. Boosters cannot be used with ½" 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
¾" (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 ¾" (19 mm) solid probes **PART NO. 630-0208**. Center to center dimension between the probes is 4 ½" (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