

Horns (also known as probes) are made from titanium and machined to specific sizes and shapes. When driven at their resonant frequency, they expand and contract longitudinally. This mechanical vibration is amplified and transmitted down the length of the probe. In liquid, the probe causes cavitation which constitutes the main mechanism for sample processing.

Choosing the appropriate horn is extremely important. The sample volume to be processed is directly related to the tip diameter. Smaller tip diameters (Microtip probes) deliver high intensity sonication, but the energy is focused within a small, concentrated area. Larger tip diameters can process larger volumes, but offer lower intensity. Probes are offered with replaceable or solid tips.

Probe tips will pit or erode over time and require replacement. Replaceable tip probes are used with aqueous samples only. Solid tip probes can be used with any type of liquid. Contact Qsonica with questions regarding tip selection.



Standard Probes



Part #	Type of Tip	Processing Volume	Tip Diameter	Amplitude (microns)
4220	Replaceable Tip	20-250mL	1/2" (13mm)	120µm
4219	Solid Tip	20-250mL	1/2" (13mm)	120µm
4207	Replaceable Tip	50-500mL	3/4" (19mm)	60µm
4208	Solid Tip	50-500mL	3/4" (19mm)	60µm
4210	Replaceable Tip	100-1,000mL	1" (25mm)	35µm
4209	Solid Tip	100-1,000mL	1" (25mm)	35µm

Note: All amplitude values are measured at 100% output.

Replacement Tips for Standard Probes

Standard 1/2", 3/4" and 1" horns have replaceable tips. During normal use, tips erode and become less effective over time. These worn tips can be easily removed and replaced.



Part #	Tip Diameter	For Use With
4406	1/2" (13mm)	#4220
4407	3/4" (19mm)	#4207
4408	1" (25mm)	#4210



New Tip



Worn Tip

Microtip Probes

Microtips are thin, high intensity probes which are designed for processing small sample volumes. Microtips screw into the threaded end of the standard 1/2" probe (#4220).



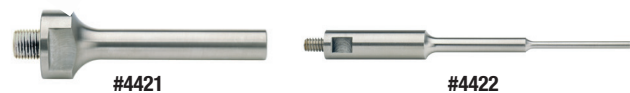
Part #	Processing Volume*	Tip Diameter	Amplitude (microns)
4417	0.2-5mL	1/16" (2mm)	320µm
4418	1-15mL	1/8" (3mm)	380µm
4420	10-50mL	1/4" (6mm)	200µm

*The recommended processing volume range is application specific. Contact Qsonica for application assistance.



Coupler with Stepped Microtip

The stepped microtip and coupler assembly is a low intensity option which can be used to process small volumes that do not require high power. The probe tip remains 1/8" diameter for 48mm. This 2-piece assembly attaches directly to the converter.



Part #	Processing Volume	Tip Diameter	Amplitude (microns)
4422*	0.5-15mL	1/8" (3mm)	200µm
4421	Coupler - *required for use of a Stepped Microtip		

Extenders

Extenders attach to standard probes of the same tip diameter and extend the length of the probe assembly to reach down into tall vessels.



Part #	Type of Tip	Length	Tip Diameter
406HW	Solid Tip	5"	1/2" (13mm)
407HW	Solid Tip	5"	3/4" (19mm)
408HW	Solid Tip	5"	1" (25mm)

Booster

A booster (#4121TI) attaches between the converter and a standard 3/4" or 1" probe. The booster will double the amplitude of the probe.



Part #	For Use With	Gain Ratio
4121TI	3/4" (19mm) and 1" (25mm) Probes	2 to 1

High Gain Probes

High gain probes offer double the amplitude of standard 3/4" and 1" probes. These probes attach directly to the converter and are available with solid or replaceable tips.



Part #	Type of Tip	Processing Volume	Tip Diameter	Amplitude (microns)
4305	Replaceable Tip	50-500mL	3/4" (19mm)	120µm
4306	Solid Tip	50-500mL	3/4" (19mm)	120µm
4310	Solid Tip	100-1,000mL	1" (25mm)	70µm
4311	Replaceable Tip	100-1,000mL	1" (25mm)	70µm