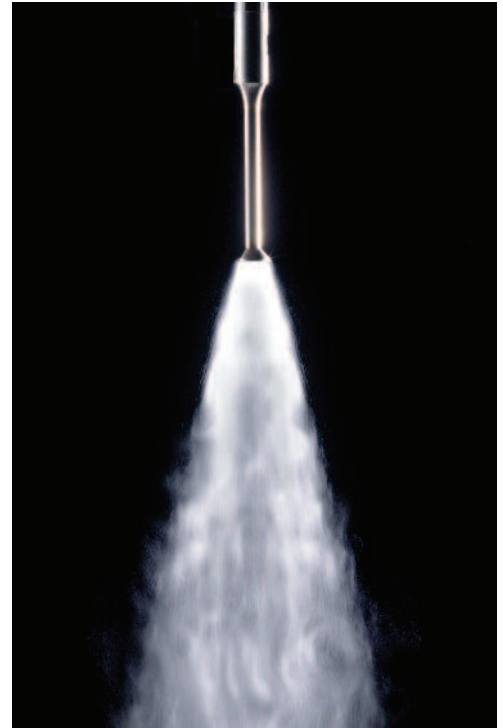


Low and Medium Atomization Rate – 40 kHz

- From microliters to liters – continuous or intermittent
- Dispenses material with negligible overspray
- Pressureless atomization – low velocity mist
- Low cost atomizing probe replacement
- Minimal atmospheric contamination
- Virtually uncloggable



VCX 134 ATDP – 40 kHz*

TYPICAL APPLICATIONS

- Coating non-woven fabric, paper, etc.
- Laboratory spray drying
- Injecting moisture into a gas stream
- Applying minute amount of oil, fragrance or flavor onto a product

GENERAL DESCRIPTION

Unlike conventional atomizing nozzles that rely on pressure and high-velocity motion to shear a fluid into small drops, the ultrasonic atomizer uses only ultrasonic vibrational energy to generate a gentle, low-velocity spray. Overspray is practically eliminated, resulting in substantial material savings and reduction in airborne pollution. The liquid can be dispensed to the atomizing probe (nozzle) by either gravity or a small low-pressure metering pump, and atomized continuously or intermittently. The rate at which the liquid is atomized depends, within limits, solely on the volume that is being delivered onto the atomizing surface, and the frequency. Typically, the higher the frequency, the lower the processing capability. The amount of material atomized can be as little as 2 $\mu\text{l}/\text{sec}$. Because the droplets typically drift downward at low velocity under the influence of gravity, the probe should be mounted with the tip facing downward, and air turbulence kept to a minimum to mitigate spray pattern distortion. Low velocity air and baffles can be used to entrain the spray to a specific area. A wide variety of coatings, chemicals, lubricants, and particulate suspensions can readily be atomized. However, factors such as viscosity, miscibility, and solid content deserve consideration. For optimum atomization, the viscosity should be under 500 cps and the solid concentration kept below 30%. Because the atomization process depends on setting a liquid film into motion, typically the higher the viscosity – the lower the flow rate, and the more difficult the application. The atomization of liquids containing long-chained polymer molecules is problematic, even in diluted form, due to the highly cohesive nature of the material. In many cases, mixtures with particulates can be atomized, because the solids are simply carried along in the drops. The low transport velocity of the liquid through the probe permits even abrasive slurries to be processed with negligible erosion of the passageway. Compared with conventional pressurized nozzles, the feed channel running through the probe and exit orifice are relatively large, and practically uncloggable. Drop size is primarily a function of frequency, and with water, the median drop size at 40 kHz is approximately 50 microns.

* Shown with atomizing probe Part No. 630-0668

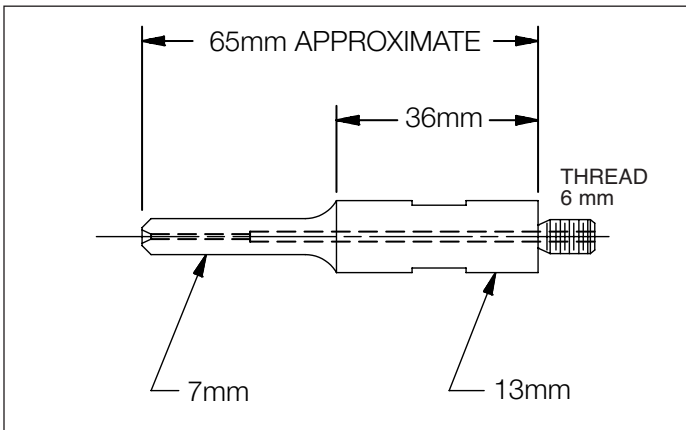
HOW DOES IT WORK?

The ultrasonic power supply converts 50/60 Hz to high frequency electrical energy. This electrical energy is transmitted to the piezoelectric transducer within the converter, where it is changed to mechanical vibrations. The ultrasonic vibrations are intensified by the probe and focused at the tip where the atomization takes place. The liquid travels through the probe and spreads out as a thin film on the atomizing surface. The oscillating tip disintegrates the liquid into micro-droplets, and ejects them to form a gentle, low velocity spray.

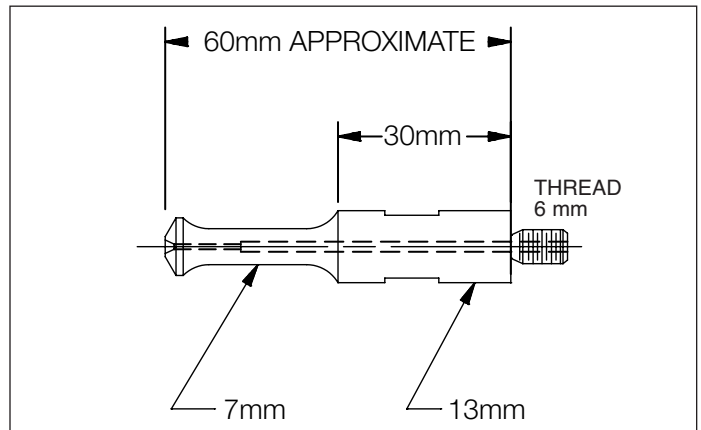
SPECIFICATIONS

POWER SUPPLY	Net power output: 130 Watts. Frequency: 40 kHz (Model No. VCX 134 ATDP) Dimensions: (H x W x D): 4½" x 9¾" x 12½" (115 x 250 x 320 mm) Weight: 7 lbs. (3 kg)
FEED-THROUGH CONVERTER	Piezoelectric lead zirconate titanate crystals (PZT) 40 kHz - Part No. CV 249. Diameter: 1¼" (32 mm) Length: 4⅝" (108 mm) Weight: 6 ounces (170 grams) Cable length: 5' (1.5 m)
ATOMIZING PROBE*	Titanium alloy Ti-6Al-4V. Autoclavable. 40 kHz: 630-0667, or 630-0668
MEDIAN DROP SIZE	40 kHz: 50 microns
TUBING REQUIRED	⅜" (5 mm) inside diameter.
ELECTRICAL REQUIREMENTS	Unless otherwise requested, units are shipped wired for 117 volts, 50/60 Hz. For export please specify desired voltage options.

40 kHz ATOMIZING PROBES



Narrow spray tip
Low atomization rate. Up to 30 ml./min.
Part No. 630-0667



Wide spray tip
Medium atomization rate. Up to 50 ml./min.
Part No. 630-0668

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

ORDERING INFORMATION

Model No.

130 Watt ultrasonic atomizer 40 kHz VCX 134 ATDP

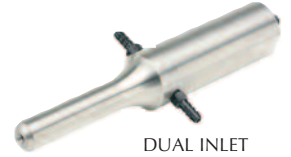
* Please specify probe part number. Unless otherwise specified, the atomizer will be shipped with atomizing probe Part No. 630-0667.

Note: Shipped complete and ready for operation with an atomizing probe, two wrenches Part No. 888-00026 and Part No. 888-00035, and instruction manual.



ATOMIZERS FOR HIGH ATOMIZATION RATE

With the dual inlet probe the mixed liquids flow through the probe and spread out as a thin film on the tip surface. The oscillations disintegrate the liquid into micro-droplets and eject them to produce a fine, low velocity spray. One port can be sealed when only one liquid has to be processed. Threaded inlet ports #10-32 UNF thread. Use with 5/32" (4 mm) inside diameter tubing.



DUAL INLET
ATOMIZING PROBE
20 kHz

Atomization can be continuous or intermittent. The probe is fabricated of titanium alloy Ti-6Al-4V and is autoclavable.

DUAL INLET ATOMIZING PROBE

	20 kHz DUAL INLET ATOMIZING PROBE
PART NO.	630-0434
COMPATIBLE WITH	VCX 130 FSJ
CONVERTER	CV 18
MAX. FLOW RATE*	100 ml/minute
MEDIAN DROP SIZE	90 microns

* With water

ORDERING INFORMATION

Model No.

130 Watt ultrasonic atomizer with dual inlet atomizing probe – 20 kHz VCX 130 AT