HEAT USED IN ULTRASONIC CLEANING MACHINES

Clean manufactured parts and sterilize instruments

Application

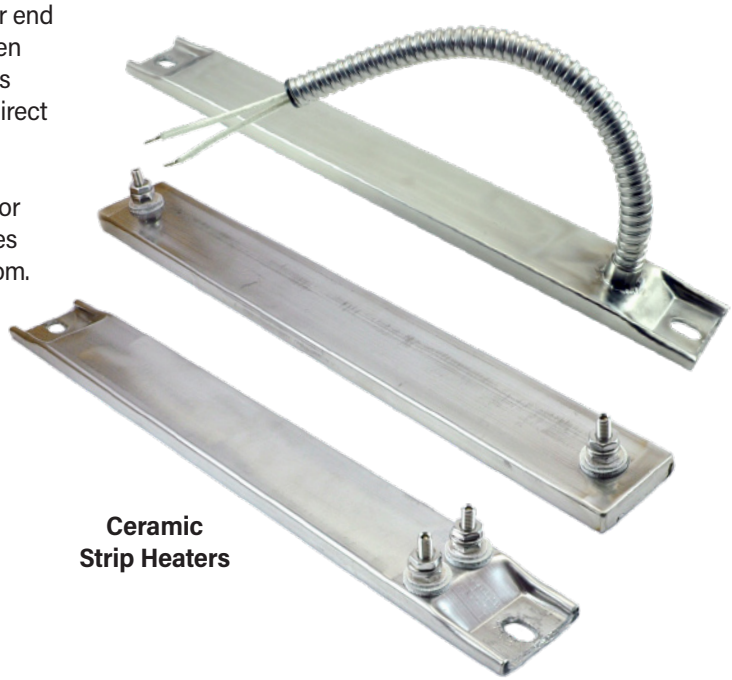
Ultrasonic cleaning is a safe and effective way to clean parts used in industries ranging from Machining and Finishing to Food and Drug manufacturing. Smaller tabletop models can be used for sterilizing medical instruments or cleaning jewelry. Ultrasonic frequencies ranging from 20 to 40 kHz, are converted to mechanical vibration through the transducers in the tank. This creates microscopic bubbles within the cleaning fluid that cleanse parts of contaminants such as machining oils and lubricants, metal chips, dirt, or even microscopic fibers.

When compared with more conventional cleaning methods, ultrasonic cleaning can reduce water consumption, chemical exposure, and chemical waste disposal. It not only ensures hard-to-reach areas are clean, but may save up to 85% of the cleaning time required. Determining the correct process for cleaning parts requires consideration of time, temperature, fluid chemistry, and ultrasonic frequency. Choosing the correct cleaning fluid is essential to the process, and traditional ultrasonic cleaning theory recommends the fluid be heated to approximately 65% of the fluid's boiling point.

Solution

Ultrasonic cleaning machines are manufactured to include a corrosion-resistant stainless steel tank that will contain the cleaning fluid and parts to be cleaned. This tank fits inside a larger tank with an air gap in between to reduce heat transfer. BriskHeat Ceramic Strip Heaters (CST) are attached to the outside of the inner tank to heat the cleaning fluid. Ceramic strip heaters are constructed with a high-temperature, corrosion-resistant stainless steel sheath. The chromium-resistance wire heating element is coiled inside a ceramic core and then surrounded with magnesium oxide. Mounting tabs are incorporated into either end so the heaters can be bolted into place. The direct contact between the cleaning tank and heaters ensures the cleaning fluid maintains the optimal temperature for cleaning. BriskHeat CST heaters are direct replacements for channel heaters made by other manufacturers

Standard heaters are 1.5" wide and 0.38" thick. There are options for terminals or fiberglass lead wires. These can be used in assemblies where the heater will be in contact with surfaces on top and bottom.



Ceramic Strip Heaters

Industries

Analytical Instrumentation/Laboratory
Life Science/Medical/Pharmaceutical
Manufacturing

Types of Users

Lab Technicians/Managers
Research Scientists
Dental/Medical Offices
Machinists