



My ultrasonic cleaner is overheating...

Walker Electronics Limited produce a range of ultrasonic cleaners for use in a wide variety of applications.

Our Models Q105, T105 and H105 are specifically designed to be use in Dental Surgeries to comply with HTM0105. They have built in temperature regulation to prevent coagulation of proteins by reducing the power as the fluid temperature increases. They also record all cycle data and store it electronically.

The models QC, 80T and 80H are designed to be used in many different environments including Dental, Medical, Jewellery, Veterinary, Industry and Horology. To try and prevent excessive fluid temperature the unit will 'pulse' when it reaches approximately 50°C. This pulsing is not detrimental to the unit, however, if it is important in your application that you don't clean items in higher temperatures you should turn the unit off and either replace the cleaning fluid or allow the unit to cool. This function is NOT designed to prevent coagulation of proteins.

With the QC, 80T and 80H in dental surgeries, additional checks such as Visual Cleaning Efficacy tests and Temperature checks should be performed and recorded for verification and validation purposes.

During use, the fluid, case and top of the tank will get warm. During prolonged use this could get quite hot. Our ultrasonic cleaners are manufacture to a standard called BSEN61010-1. This states that 'accessible parts during normal use' must be below 75°C. All units are tested to comply with this during manufacture.

Due to advancements in technology, our units are more powerful than they have ever been. This allows a very short cycle length but does have the disadvantage of generation of heat. In order to minimise the cycle length and therefore the heat generated, it is essential to ascertain the correct cycle length.

To calculate the correct cycle length, the user should perform the load check strip test using our load check strips, the load check holder and a recommended cleaning solution such as WELzyme green. Start by performing a 3-minute cycle. If this fails, increase the time to 4 minutes and so on until a pass is achieved. The time taken to achieve a soil test pass result should then be used as your normal cycle time. This should be between 3 and 6 minutes. If it is any longer there may be an issue with the strips, solution or unit.

During operation, each of the units will raise the temperature of the water at approximately 1°C per minute. This means that if the cleaning solution starts at 20°C and the unit is operated for 6 minutes, the temperature will have raised to around 26°C at the end of the cycle

None of our ultrasonic cleaners are fitted with heaters. The only thing that can make the unit hotter is operation. Ultrasonic cleaners' function by producing sound waves that are transmitted into the tank and cleaning solution. These waves create millions of microscopic bubbles, which collapse or 'implode', releasing large amounts of energy, which scrub the surface clean. At the instant that the Cavitation bubble collapses it has an approximate temperature of nearly 20,000°C— hotter than the sun's surface. This is on a very small scale and for a fraction of a second, nevertheless this is enough to raise the temperature of the fluid.

So, what can I do...

- Make sure that the cycle length is correct.
- Always replace the cleaning solution at the start of each clinical session.
- Try to ensure that the water and solution are around 20°C at the start of each session.
- Replace the cleaning solution if you need to continue to use the unit but the temperature is too high for your application.
- DO NOT measure the temperature with a thermometer whilst the ultrasonic is in use as this is likely to give an incorrect reading.
- Remember that ambient temperature affects the unit too. If it's used in a hot room the heating effect will be more noticeable.

Call us on 01636 892410 if you have any further questions.