

Ultrasonic cleaner heating and pulsing information...

The ultrasonic cleaners model QC, 80T and 80H are fitted with a 'Cavitation Heating System'.

This means that whilst the unit does not use a conventional heating element the circuitry that operates transducer has been designed to create a very strong cavitation. This allows the cycle length for most applications to be greatly reduced. Heating of the cleaning fluid is a byproduct of this cavitation.

The unit will produce heat which will raise the temperature of the cleaning solution at approximately 1°C for every minute operated. So, if the cleaning fluid is at 20°C when placed in the tank and the unit is operated for 3 x 6-minute cycles, the temperature of the fluid will rise to 38°C.

In order to prevent excessive fluid temperature the unit will 'pulse' when it reaches approximately 50°C. This feature is not intended to prevent coagulation of proteins in dental applications. Separate monitoring should be used for this purpose. Under no circumstances should a thermometer be placed in the ultrasonic cleaner whilst it is operating as this could damage the thermometer and give a false reading.

The pulsing is not detrimental to the unit, however, if it is important to you that you don't clean items in these higher temperatures in dental applications due to the risk of coagulation of proteins. When pulsing is noticed, it is advised to turn the unit off and either replace the cleaning fluid or allow the unit to cool.

If the unit is allowed to pulse for prolonged periods the temperature will continue to increase well above 50°C and could eventually result in the self-resetting thermal cut out operating. Should this protection device operate the Green Neon on the front of the unit will remain illuminated, however, no ultrasonic agitation will be heard. If this should occur, unplug the unit and allow it to cool. The unit will self-reset within 5 minutes. If the unit is operated for prolonged periods it is also possible that the no-resettable internal fuse may also fail. In this case there will be no light on the front of the unit and it will not operate. The unit should then be returned to Walker Electronics Limited for repair.

A transducer overload device also protects the unit. This device may occasionally operate during normal use. It can be identified by an occasional 'pulse' during a normal cycle. This indicates that an incorrect solution is being used, the fluid level is incorrect or the transducer is self-protecting.

Water alone will not respond to ultrasonic energy when it contains dissolved gas or contaminants. You should NEVER use water alone in an ultrasonic cleaner. Water drawn from the main will contain a quantity of dissolved gas. Fresh water/solution should ALWAYS be 'de-gassed' by operating the ultrasonic unit containing the fresh water, basket and cleaning solution for 6 minutes. After degassing avoid unnecessary agitation of the fluid as this will introduce air. ALWAYS replace the fluid when visibly contaminated.

Some cleaning solutions may make the unit react in a different way to stated above. If the solution is low on surfactants the cavitation will be affected and the unit could heat up quicker. The above information is based on the unit being tested with our WELzyme green enzymatic cleaning solution.