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ultrasonic cleaner periodic testing advice 7

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E&OE

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# Ultrasonic Cleaner Periodic Testing Advice

## Comply with HTM 01-05

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**your solution in ultrasonics . . .**

Walker Electronics Limited has been manufacturing and supplying ultrasonic cleaning tanks and cleaning fluids since the early 1960's and we are currently celebrating 60 years in business.

All of our products are skilfully created using quality assured components and materials that guarantee optimum performance and reliability.

All of our manufacturing expertise and experience means that total user satisfaction is guaranteed. Our staff have a vast knowledge of different applications and are always willing to investigate new projects.

If you have any questions or problems then call us – we are here to help.

| Period | Walker Electronics Model QC and Q105 Ultrasonic Bath | Walker Electronics Model 80T and 80H Ultrasonic Bath | Other Manufacturer Ultrasonic bath |
|---|---|---|---|
| Daily | Visual inspection of instruments | Visual inspection of instruments | Visual inspection of instruments |
| Weekly |  |  |  |
| Quarterly |  |  |  |
| Yearly | Return to manufacturer for validation | Return to manufacturer for validation | Return to manufacturer for validation |

6. Remove the strips from the bath, blot-dry and examine. The strips can be filed conveniently by sticking them to a sheet of plain paper using a transparent adhesive tape.

7. Drain the bath and clean to remove debris of eroded aluminium foil.

When the foil strips are inspected, the areas that show maximum erosion should be at similar positions on all nine foils and each should be eroded to a similar extent.


On re-testing the extent of erosion, the erosion pattern should remain consistent. If the zones of erosion are markedly different on the nine foils, it indicates poor uniformity of cleaning. Poor uniformity of cleaning might be due to failure of one or more of the transducers that produce the ultrasonic vibration in the base of the bath.

A significant change between tests indicates a deterioration or failure in the transducers. If there is no erosion, this indicates complete failure. In the event of any of these findings, withdraw the ultrasonic cleaner from use and send it for repair or replace it.



# Contents

***testing of your ultrasonic cleaner…***

HTM01-05 is the standard that all primary care dental practices must be working towards. A testing protocol for ultrasonic cleaners is an important part of HTM01-05.

This leaflet sets out the procedure which Walker Electronics Ltd advise should be carried out on their range of ultrasonic cleaners. It is a combination of advice by Walker Electronics Ltd and HTM01-05.

***contents…***

# Testing schedule for Walker Electronics baths

| Daily Test | Description |
|---|---|
| Drain machine at end of day/session | Remove all contaminated water from tank. Wipe with mild disinfectant and cloth, rinse and dry thoroughly. DO NOT use corrosive chemicals |
| Cleaning efficacy | Visual inspection all items cleaned |

| Weekly Test | Description |
|---|---|
| Protein Residue Test (using DentaCheck residual protein test pages 11-13) | Confirms that the cleaning process retains the capability of removing proteins from loads. |
| Load Check Test (using the load check holder and strips pages 7-10) | Confirms that the ultrasonic cleaner is capable of removing artificial soil |

| Quarterly Test | Description |
|---|---|
| Cleaning efficacy test (load check holder and strips) | Confirms that the ultrasonic cleaner is capable of removing artificial soil |
| Ultrasonic activity test* see note on page 6 | Foil ablasion test. Refer to instruction on pages 15 to 17 of this leaflet |
| Protein Residue Test (using DentaCheck residual protein test pages 11-13) | Confirms that the cleaning process retains the capability of removing proteins from loads. |

| Annual Test | Description |
|---|---|
| Completion of ALL validation tests above | |

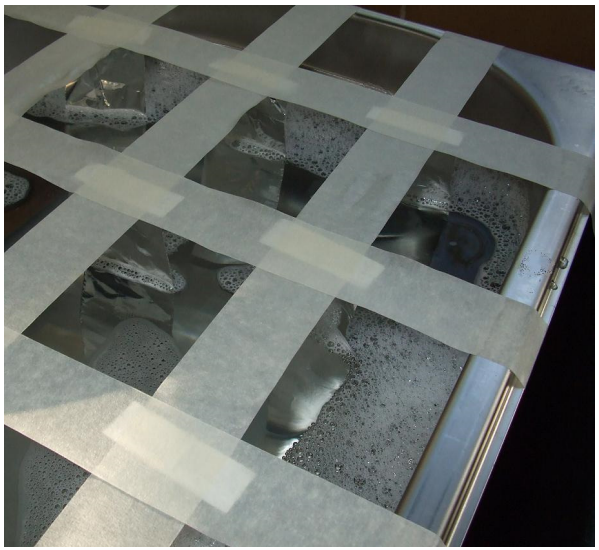


2. Ensure that:

- ✓ the water in the tank is at the required level
- ✓ the required amount of any chemical additive specified by the manufacturer has been added
- ✓ the water in the tank is at the specified operating temperature.

3. Carry out the manufacturer's recommended start-up procedure. This will normally include a period of operation to eliminate dissolved gases from the solution in the bath (the degassing procedure).

4. Using strips of adhesive tape across the top of the bath, suspend nine strips of the prepared foil in the bath in a 3 x 3 grid. Ensure that the rolled bottom end of each foil strip is no more than 10 mm above, but not touching, the bottom of the bath.



5. Operate the bath for the predetermined exposure time. This varies typically between 30 seconds and 10 minutes depending on the power rating of the ultrasonic transducers.

# Performing a Foil Ablation Test

**Ultrasonic activity test or Foil Ablation as described in HTM 01-05**

The ultrasonic activity can be investigated by the erosion pattern created on aluminium foil exposed in the tank for a short period. This activity may not be uniform throughout the tank. Validation tests will determine the pattern variation at defined positions and the time required to produce this pattern.

*A roll of test foil to the specification recommended by HTM 01-05 is available by calling Walker Electronics Ltd on 01636 892410 or ordering online at www.walkerelectronics.com.*

The following equipment will be required:

1. aluminium foil provided for ultrasonic cleaner testing
2. adhesive tape (for example autoclave indicator tape or masking tape)
3. a watch or clock with a second hand
4. a rule or tape measure

**Method**

The following method should be used:

1. Cut strips of aluminium foil in lengths 120 mm longer than the bath is deep. Roll up one end of the foil so that the foil is now as long as the bath is deep.

| Performed by | Reference |
|---|---|
| User/operator | Walker Electronics Ltd |
| User/operator | Walker Electronics Ltd |

| Performed by | Reference |
|---|---|
| User/operator | Walker Electronics Ltd |
| User/operator | Walker Electronics Ltd |

| Performed by | Reference |
|---|---|
| CP(D) or service engineer | BS EN ISO 15883:1 |
| CP(D) or service engineer | BS EN ISO 15883:1 |
| CP(D) or service engineer | BS EN ISO 15883:1 |

| Performed by | Reference |
|---|---|
| CP(D), service engineer or return to Walker Electronics Ltd | As above |

*definitions overleaf…*

***Definitions (as per HTM01-05)***

**CP (D) - Competent Person (Decontamination)**

This person is responsible for the servicing, testing and maintaining of the decontamination within in practice. The competent person may be either directly employed by the practice, or provide a service by the PCT or a third party.

**Service Engineer**

A person provided under a service level agreement or contract who is certified by the service agent or equipment Walker Electronics Ltd to be competent to both service and test specified decontamination equipment. This person may, among other duties, perform validation tests in accordance with EN standards cited in HTM01-05. The service engineer may give an opinion on the outcomes of validation testing as well as providing data to an Authorising Engineer (Decontamination) or Authorised Person (Decontamination) for validation approval.





HTM 01-05 states:

*"Ultrasonic energy meters are now available to monitor efficiency and operating frequency of ultrasonic baths. They are much quicker and more convenient than the classic foil ablation test but should be used with care. Precise positioning of the wand will need to be noted in order to make the test repeatable."*

Walker Electronics Ltd purchased and tested an ultrasonic activity meter from a reputable ultrasonic cleaner manufacturer. The activity meter that we tested did not give a meaningful reading as the power was represented in a 0 to 100% format with no explanation of what 100% was. The frequency that the activity meter stated was also suspect as the calibrated external frequency counter connected to the circuit was producing a different result.

As HTM01-05 states, precise positioning of the wand is essential to its accuracy. It is not possible under normal surgery conditions to position the wand with enough accuracy to obtain a consistently reliable result.

For these reasons Walker Electronics Ltd advise against the use of wand meters in our baths.

# Interpreting the Results

The colour of the solution will indicate the level of protein residue on surface. By regarding the color of the solution, an estimate of surface cleanliness can be made.

**Brown = PASS.** No protein detected. No further action required.

**Shades of Blue = FAIL.**
Protein residue is present.
The darker the blue colour, the more protein has been detected.

*A box containing 25 DentaCheck tests are available by calling Walker Electronics Ltd on 01636 892410 or ordering online at www.walkerelectronics.com*



# Understanding the Foil Ablation Test

On a multi transducer tank the foil ablation test, protein residue test and the soil test will all provide a different, but accurate assessment of the ultrasonic cleaners' ability to remove protein.

On a single transducer tank it is Walker Electronics Ltd opinion that the weekly load test and the weekly protein residue test OR foil ablation test alone will determine the cleaning efficiency of the ultrasonic cleaner. If there were a fault that leads to a failure of the protein residue test or soil test, this fault would also have lead to a failure of the foil ablation test. Conversely, if there were a fault that leads to a failure of the foil ablation test this fault would also have lead to a failure of the protein residue test or soil test.

Walker Electronics Ltd are therefore of the opinion that the foil ablation test provides little or no benefit in assessing the efficacy of an ultrasonic cleaner WITH A SINGLE TRANSDUCER and therefore advises that this test can be omitted from the service schedule of its model QC and Q105 units.

# About Load Test Strips

Walker Electronics Ltd load check strips are a consistent, reproducible and reliable way of keeping check on the cleaning efficiency of your ultrasonic bath.

They are used in conjunction with the load check holder and can be used with no risk of adding blood borne contaminants as they contains two sources of protein, lipids and polysaccharides derived from eggs and porcine. Specially formulated to mimic the cleaning efficacy soil tests for surgical instruments as described in **HTM 01-05.**

The strips have many benefits including:

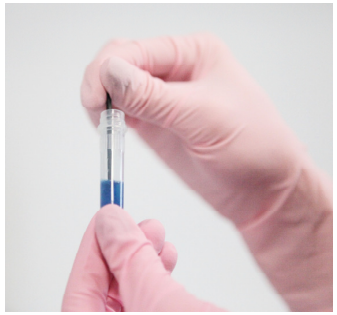
- Safe to handle
- Reproducible testing
- Easy to interpret results
- Bench marked performance suitable for validation
- Mimics occluded surfaces to present a realistic challenge

Use these strips on a weekly basis to validate the cleaning efficiency of your ultrasonic cleaner.

**2.** Unscrew the cap.

**3.** Swirl the swab in the brown reagent for 5 seconds.

**4.** Visually inspect the reagent for colour change. If the reagent has turned a shade of blue, protein has been detected. The darker the blue colour, the more protein detected. If the reagent remains brown, protein residue has not been detected.



# DentaCheck Protein Residue Test

***DentaCheck Protein Residue test***

The DentaCheck protein residue test is a rapid test that has the ability to detect residual proteins left behind on the surfaces of hard to clean dental and surgical instruments. An easy to read colour change gives you your final results within 10 seconds. DentaCheck is suitable for use with washer disinfectors, ultrasonics and even manual cleaning.
This protein test is based on a dye-binding solution used in clinical chemistry and can detect protein residues within 1ug sensitivity, therefore incubation is not required.
DentaCheck meets and exceeds current guidelines for protein testing, as published in HTM 0105 (pg60 14.4)

**Gloves must be worn when utilizing the residual protein test**

**1.** If the object to be tested is already wet, swab the object focusing on hinges or crevices which may be contaminated. If the object to be tested is dry, simply wet the swab with sterile water before you swab the areas of interest.



# Load Test Strips Instruction

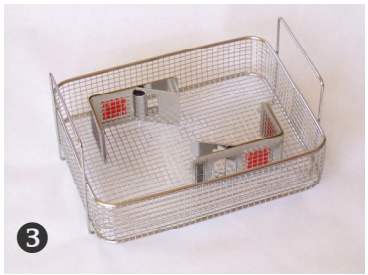
1. Fill the bath with water and your normal detergent at the recommended dilution and to the recommended level. The fluid temperature **must** be in excess of 20°C.

2. Degas the solution by running the unit through at least 1 cycle as advised by the equipment manufacturer.

3. Ensure that your hands and the load check holder are dry.


4. Place 1 check strip in the holder Ensuring it is centrally located and not protruding from either side (1)


5. For the model QC and Q105, place the holder in the middle of the basket as shown(2). For the models 80T and 80H place one holder at each end of the basket as shown (3)



6. After running a complete cycle (see important notes) remove the holder from the basket and carefully remove the check strip. Caution should used, as the holder may be hot and any residual soil from the strip may stain.

**IMPORTANT notes...**

Place the holder in a vertical position as shown as placing it horizontally may affect the result.

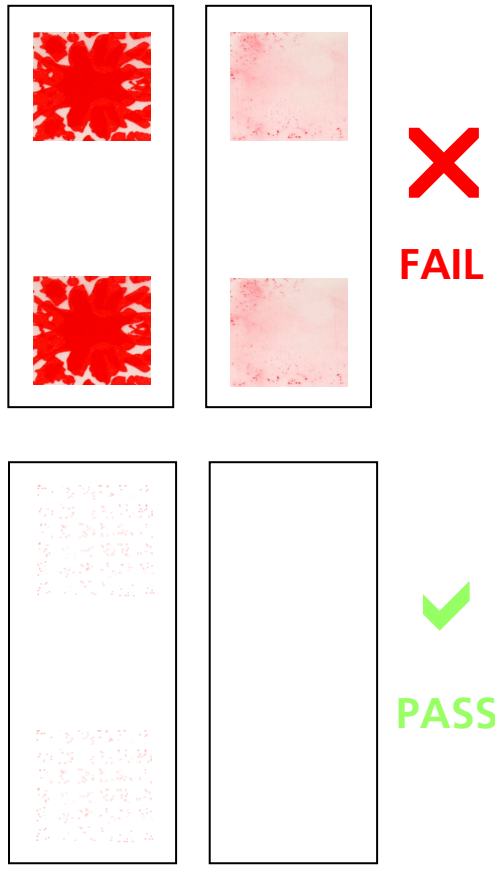
The suggested time of 6 minutes SHOULD be the time for your normal cycle length for the QC, 80T and 80H.
In the case of the Q105, the default cycle length is 3 minutes and this should be the length of the initial soil test cycle. Should the test fail at 3 minutes, the test time should be increased in 1 minute increments until a pass result is achieved. Consult Walker Electronics Ltd if the test fails after 6 minutes test time.

**The time taken to achieve a soil test pass result should then be used as your normal cycle time.**

The test can be affected by many factors. The most common reasons for test failures are incorrect solution or dilution especially in hard water areas, trapped air in the water, and incorrect storage of test strips

*Both the load check indicator strips and the load check holder are available by calling*
*Walker Electronics Ltd on 01636 892410 or ordering online at www.walkerelectronics.com*

Inspect the check strip for evidence of soil by placing it against a white background




If more than 2% of the soil remains on the strip, cleaning should be considered inadequate and department procedures should be followed in respect of failed cleaning efficacy testing.