# H105 Ultrasonic Cleaner

## Operators Handbook

Full operating instructions in line with HTM01-05


# IMPORTANT

**Please refer to this operator's handbook BEFORE operating the equipment**

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# *contents...*

# *what is ultrasonic cleaning?...*

The audible frequency range of the human ear is from about 20 Hertz (20 Hz) to 20 Kilohertz (20 kHz), Middle C is 216 Hertz, a grasshopper call around 7 kHz and a bat signal about 70 kHz. Beyond human audible range is called 'Ultrasonic'.

Most ultrasonic cleaners operate in the range of 30 to over 70 kHz; ours have an operating frequency of 45 to 55 kHz depending on the model.

The H105 typically operates at 46 to 50kHz.

Ultrasonic cleaners function by producing sound waves that are transmitted into the tank and cleaning solution. A 'generator' located within the ultrasonic cleaner develops the high frequency signal. The generator supplies the power to the Piezos or 'transducers', which creates the sound waves in the tank. These sound waves create millions of microscopic bubbles, which collapse or 'implode', releasing large amounts of energy, which scrub the surface clean. This process is called 'Cavitation'.

Ultrasonic cleaners have many applications including the cleaning of:

Dental Instruments
Dentures
Endoscopes
Veterinary Instruments
Chiropody Instruments
Clocks and Watches
Jewellery
Printed Circuit Boards ... and many more.

Apart from the strength of the ultrasonic waves, an equally important part of the cleaning process is the solution used. An incorrect solution will slow down the cleaning process and cause poor results.

Suitable cleaning solutions for use in the H105 can be found on page 31 however many more are available at www.walkerelectronics.co.uk

# *before you operate your ultrasonic cleaner...*

To enable you to get the best results, and for your own safety, it is IMPORTANT to read this handbook.

Please unpack your ultrasonic cleaner carefully and check the contents. The box should contain:

- 1 x H105 ultrasonic cleaning unit
- 1 x stainless steel lid
- 1 x stainless steel basket cage with 3 inserts:
  1 basket and 2 instrument trays
- 1 x Operator's handbook (this handbook)
- 1 x 1m IEC mains lead
- 1 x USB convertor and USB flash drive
- Sample cleaning fluid

If any of the above items are missing please contact Walker Electronics Limited quoting the serial number, which can be found on page 36 of this manual.

As stated above, your ultrasonic cleaner is supplied with a 1m lead fitted with an ASTA approved UK moulded plug. The plug is fitted with a 5-amp fuse that complies with BS1362. The lead is also fitted with an IEC socket.

If the plug does not fit your sockets please call 01636 892410 and speak to a member of our staff who will advise you accordingly.

Please read this handbook thoroughly to familiarise yourself with the controls before operating the equipment.

The unit is supplied with factory set default settings. It is recommended that these settings are used. Instructions on how to change these settings are contained within this handbook but this should only be done with complete knowledge of the product.

The factory setting can be restored by.

From the home screen select 


From the Main menu select Settings

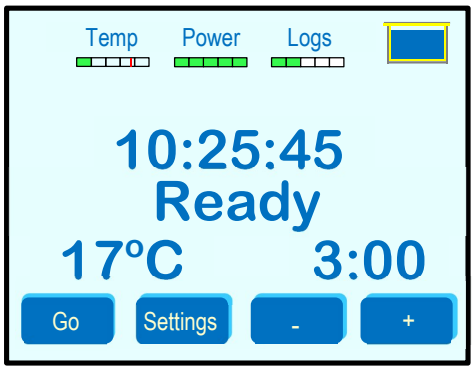
From the Settings menu select Settings 2

From the Settings 2 menu select Reset defaults and then select 

# *Installation and operation...*

The ultrasonic cleaner should be mounted on a level surface. It must not be exposed to extreme temperatures, moisture, strong vibrations, and dusty or corrosive environments.
To operate the unit first place the appropriate fluid in the tank. This should be selected from the list on page 29 of this handbook.
Fill the tank to the recommended depth. This is indicated by the ridge or fill level around the tank. Plug the unit into a suitable socket and switch on.

After a few seconds the screen will display the serial number and the firmware version.




After a few seconds a screen similar to the above will be displayed. This is referred to as "The home screen" throughout this manual.

At the top of the screen the left-hand pictogram displays the temperature of the fluid in the tank. See page 19,20 and 21.

The top centre pictogram shows the unit power level set by the user. See page 9

The top right-hand pictogram shows the status of the lid. See page 12

The internal clock time is displayed in the centre of the screen. It is in 24H clock format (hours:minutes:seconds). If this is incorrect please follow the instructions on pages 7 and 16 of this handbook.

The text directly below the time shows the unit status. See page 24

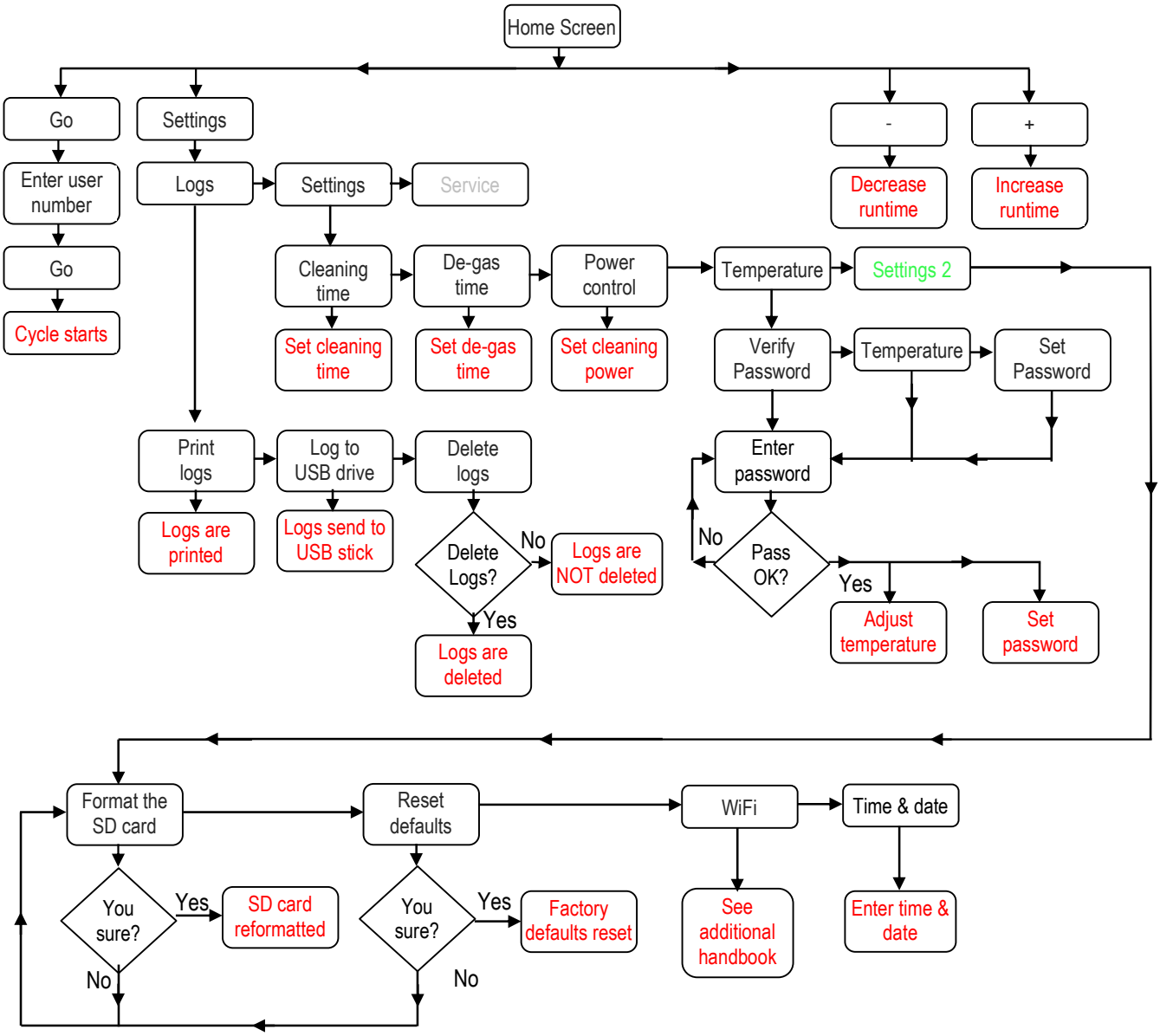
The current fluid temperature is displayed in the bottom left hand corner of the screen in degrees centigrade.

The current cycle time is displayed in minutes and seconds in the bottom right hand corner of the screen.

The 4 operation buttons are displayed at the bottom of the screen.

The screen is touch-sensitive. See page 7 for operational tips.

## *the mode menu...*



# *first time use and setting the clock...*

The clock should be set on delivery, however if it is not please follow the instructions below. Alternatively, the clock may be set by connection to a PC (see page 16). If the clock is not set the unit will display a message and will FAIL ALL cycles.

The screen is touch sensitive and options can be chosen in one of two ways:

- Press and hold your selection until selected
- Press and quickly release then press and release Select at the bottom of the screen

## Setting the clock

From the home screen select Settings

From the Main menu select Settings

From the Settings menu select Settings 2

From the Settings 2 menu select Time & date

Move up and down the menu by pressing Up and Down or press Year, Month or Day to select.

Once the Year, month or Day is highlighted pressing Select will increase the value. Pressing and holding will cycle through the values.

Once the year, month and day are correct you may set the time.

Select Time from the menu. Press - or + to decrease or increase the time.

Press Set to save. Return to the home screen by pressing Back until it is displayed.

# *the degas cycle...*

Degassing is the process of releasing air that is trapped in the fluid within the tank.

Tap water has a small quantity of dissolved air in it, often because it is passed through fine metal gauze in order to introduce air for aesthetic and controllability purposes. This dissolved air has a 'cushioning' effect on the ultrasonic waves, which reduces the effectiveness of the ultrasonic cleaner.

The unit will automatically perform a degas cycle after it has been disconnected from the mains and then re-connected. The degas cycle occurs before the first validated cycle.

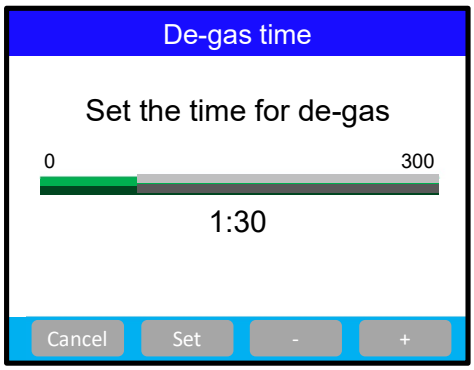
The factory set time on the degas cycle is 1 minute 30 seconds. This can be increased (to a maximum of 300 seconds) or reduced (to a minimum of 0 seconds) should your application require, however it is suggested that the 90 seconds be the optimum time for the cycle.

# *adjusting the degas cycle...*

From the home screen press Settings

From the Main menu select Settings

From the settings menu select De-gas time




Press - or + to decrease or increase the time

Press Set to confirm the setting

Return to the home screen by pressing Back until it is displayed.

# *adjusting the power...*

You may wish to change the power setting of the ultrasonic cleaner if you are cleaning delicate instruments or want to soak some instruments for longer. You may also want to change the power setting to control the temperature of the fluid – the lower the power the less the ultrasonic heating effect.

For most dental instruments it is recommended to set the power to 100%.

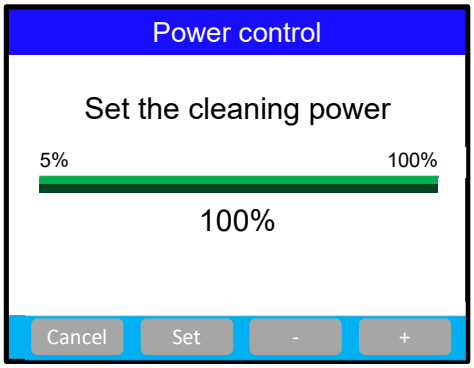
The power settings are set in 5% increments from a minimum of 5% to a maximum of 100%.

## to adjust the power...

From the home screen press Settings

From the Main menu select Settings

From the settings menu select Power control




Press - or + to decrease or increase the power

Press Set to confirm the setting

Return to the home screen by pressing Back until it is displayed.

# *loading the basket and cleaning instruments...*

It is very important that the instruments are cleaned as soon as possible after contamination. The time from contamination until cleaning/further processing is called the Decontamination Holding Time (DHT). No matter what type of contamination is on the instruments, the DHT should always be kept to a minimum, as dried contamination is harder to remove than 'fresh' contamination.

The DHT is particularly important where blood contaminations are present. 'Fresh' or 'wet' blood is easily removed whereas dried blood is not. This is firstly because blood contains haemoglobin that becomes insoluble when dried. Secondly, fibrin, a fibrous protein that is built up during coagulation is also insoluble. These proteins easily adhere to the surfaces of surgical instruments making them difficult to remove even with the aid of strong chemical cleaners.

AS SOON AS POSSIBLE after contamination, instruments should be rinsed in fresh COLD water to remove visible soiling. Care should be taken to avoid aerosol production.

The items should then be loaded into the basket or tray, which should be placed in the holding rack and lowered into the tank. The loaded rack may then remain in the tank for a short time before being exposed to the ultrasonic cycle. You may wish to leave the instruments for several minutes if the contamination was dried, or you could decrease the power and increase the cleaning time. 3 minutes ultrasonic cleaning at 100% power is the same as 6 minutes ultrasonic cleaning at 50% power, however the soaking time is doubled allowing any dried-on contamination to be softened.

Please note:

- Always place the instruments in the basket or tray and NOT on the base of the tank.
- Ensure that instruments with hinges or joints are fully open when placed in the basket.
- DO NOT overload the basket. There should only be one layer of instruments and NONE of the instruments should be in contact with each other.
- Each of the specially designed instrument trays holds 11 individual instruments.
- The holding rack can be loaded with any combination of instrument trays and baskets. Additional trays and baskets are available at www.walkerelectronics.co.uk

# *operating a complete validated cycle...*

Please ensure that you have followed the instructions on pages 4 and 5 "before you operate your ultrasonic cleaner and installation" and have read all of the "do's and don'ts" on pages 28 and 30.

Place the instruments to be cleaned in the basket and tray assembly provided as described on page 10 and load these into the rack. Any combination of trays and baskets are acceptable, although it is advised to place the trays at the bottom of the rack and the baskets at the top.

Remove the lid, lower the rack into the cleaning fluid within the tank and replace the lid.

Ensure that the home screen is displayed on the screen.

Set the time for the cycle. The cycle length is displayed in the bottom right hand of the home screen. 3 minutes is the default and is suitable for cleaning most dental instruments although this can be increased to 6 minutes.

Press - or + to decrease or increase the time in 30 second divisions.

When the desire cycle length is displayed press Go

If "Cyclelog is full" is displayed this indicates that the memory on the unit is full and unable to store any more information.

Pressing Go will continue with the cycle, however INFORMATION ON THE OLDEST CYCLE WILL BE LOST AND NOT RETRIEVABLE. Press cancel to end the cycle. You should then either download the information as described on page 18, log the cycles to USB flash drive as described on page 18 or print the information as described on pages 14 and 15 of this handbook.

If memory is available you will be prompted to enter a User number.

Press - or + to decrease or increase the User number.

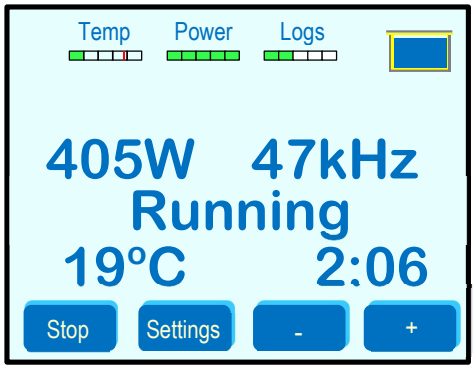
Write the name of the user against the user number on page 34 of this handbook.

Should you wish to cancel the cycle press Cancel

When the correct user number is displayed press Go . The cycle will then start.

The unit will 'click' several times before starting. This is to enable the unit to start at the next whole second as well as checking that the fluid level is correct.

If this is the first cycle since the unit was connected to the mains and the degas cycle time (see page 8) is set above 0 seconds, the word 'Degassing' will be displayed. After the degassing cycle has completed the unit will start the full cycle.




In this example:

Temp  This is a pictorial indication of the temperature. The red line indicates the limit temperature (see page 19,20 and 21)

Logs  This is a pictorial indication of the stored logs. No logs is indicated by all white segments. 100 logs is indicated by all green segments.

Power  This is a pictorial indication of the power setting. A power setting of 100% is indicated in the example.

 This is a pictorial indication of the lid status. Lid closed is indicated in the example. The lid open icon is: 

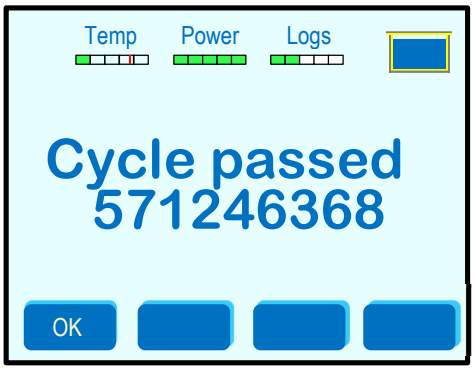
405W This means that the unit is drawing 405 Watts. This figure will vary depending on many things such as the power setting, fluid temperature, the fluid level, the mains voltage, the basket loading and even the type of fluid used. This figure however should be in the range of 350 to 450 watts if the power level is set to 100%. A figure below 350 watts indicates there may be a problem with the unit.

47kHz This is the operating frequency of the transducer. In this example it is 47 kiloHertz. This represents a vibration of 47,000 times a second.

19°C This is the current temperature of the solution in the tank. It is rounded to the nearest degree centigrade. A reading of 19°C means the temperature is between 18.6°c and 19.5°c.

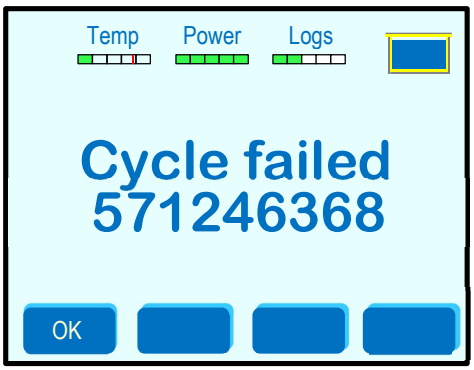
2:06 This means the unit has another 2 minutes and 6 seconds to run before the current cycle is complete. This will count down until 00:00 when the cycle will be complete and the unit will stop.

When the timer reaches 00:00 the cycle will stop and the following screen may be displayed:




This indicates that the cycle has been completed successfully.
571246368 is the unique validated cycle number.

If there was a problem with the cycle the following screen is displayed:




This indicates that the cycle has failed.
Again 571246368 is the unique cycle number.
The cycle could have failed for many reasons.
A complete list of possible reasons can be found on page 23 of this handbook.

After a failed cycle the instruments should be removed, rinsed in clean cold water and the cycle repeated immediately.

After a cycle has been completed pressing Go displays the home screen.

# *setting up the printer...*

The unit has an RS232 printer port located on the rear panel. A 'receipt' printer may be attached to this so that a validation report can be printed.
The printer is an optional extra which can be purchased from Walker Electronics.
A special lead is supplied with the printer. It is a grey lead, has a large silver coloured plug on one and a smaller black rubber plug on the other.
Attach the large silver plug to the socket underneath the printer and the other end to the RS232 Printer port on the ultrasonic cleaner. Ensure both plugs are securely screwed in.
Insert the ribbon cartridge and paper as specified in the operator's handbook supplied with the printer. Attach the power lead and turn on the power.
Always turn off the power to the printer before turning off the power to the ultrasonic cleaner.

# *printing validation reports...*

The unit will store up to the last 100 validated cycles. These can be printed and stored to form part of the HTM0105 validation process. The records can also be downloaded and stored electronically. Please refer to pages17,18 and 19 for how to do this.

# *how to print a validation report...*

Set up and attach your printer as described above.

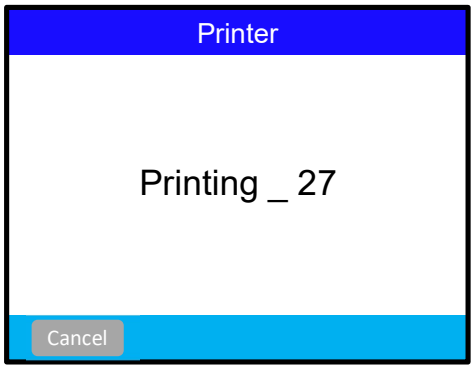
From the home screen press Settings

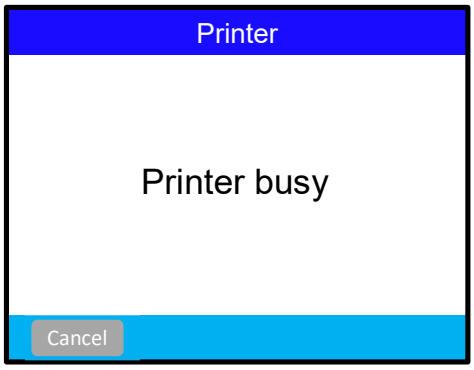
From the Main menu select Logs

From the Logs menu select Print logs

The logs will now be printed.

During printing the following screens will alternate depending on the speed of the printer and the size of the printer buffer (memory).



# *installing the USB driver and software on a PC...*

**You DO NOT need to install the software on a PC if you intend to transfer data using the flash drive and adaptor only!**

Go to www.walkerelectronics.co.uk and visit the downloads section.
In the driver downloads section click on 'Driver Programs for Q105 and H105' to download the program and run it.

Click Next on the 'Welcome to the UltrasonUSB Setup Wizard' screen.
Select a folder for installation (it is advised to leave it as the default) and then click on install for 'Everyone' or 'Just me'.
Now on the 'Confirm Installation' page click next.
The software is then installed and an Icon is added to your desktop. Click Close to close the installer.

# *connect the tank…*

Connect the tank with the waterproof USB lead provided.
When the tank is connected for the first time to a PC via the waterproof USB cable, it will automatically install all device drivers and files needed.

# *other features of the UltrasonUSB program...*

When the waterproof USB lead is connected to your PC and the ultrasonic cleaner, you can control all of the features of the ultrasonic cleaner from the PC just as you can from the tank.

Clicking on the start/stop, Mode, – and + icons on the screen has exactly the same effect on the ultrasonic as does pressing the buttons on the ultrasonic cleaner.

In addition, you can quickly and easily set the date and time stored on the unit. By pressing the 'Set time' icon on the screen the PC's date and time are transferred to the unit. Before proceeding with this operation please ensure that the PC date and time are correct.

The reset defaults button will automatically restore the cycle time, degas time, printer baud rate, power setting and maximum temperature control to the factory default setting.

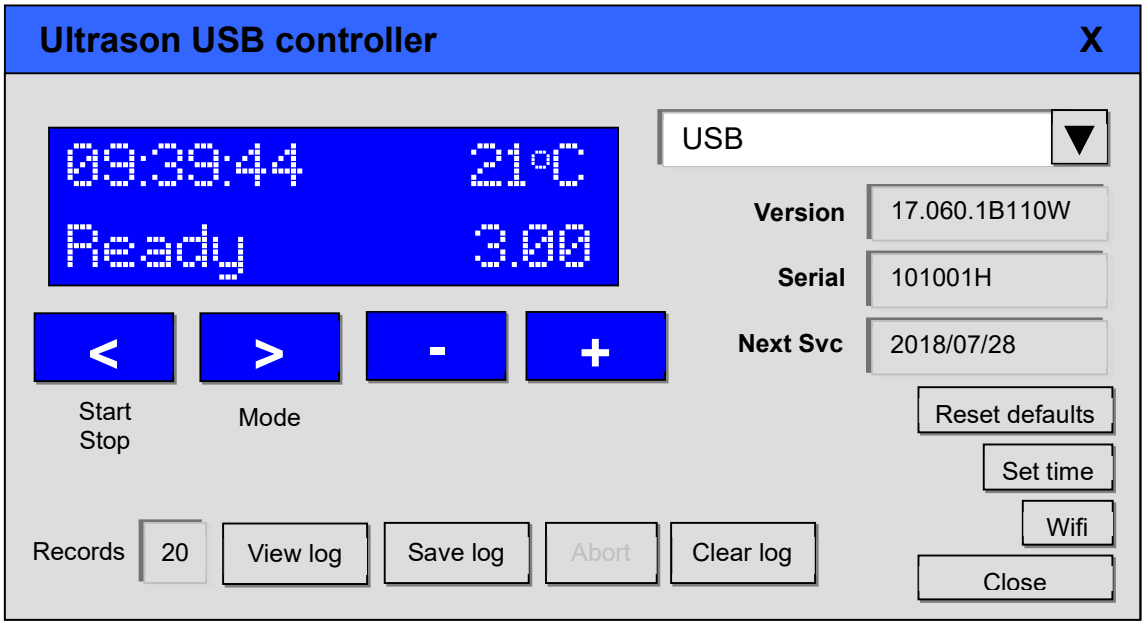
For your information the Firmware Version, serial number and Next service date are shown

By right clicking on the UltrasonUSB controller bar you can also adjust the cleaning time, degas time, limit temperature, power control setting and printing Baud rate.

## *transferring the information from the unit to a PC...*

Double click the UltrasonUSB icon on your desktop to load the program.

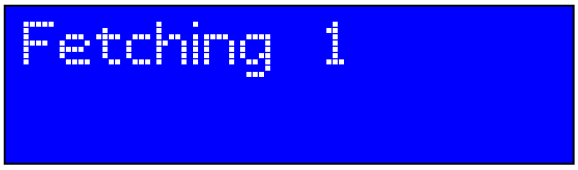
A screen similar to the following will be displayed:




To download the information from the ultrasonic unit and save as a text file on a pc click the 'Save log' icon.

Select the location for the file, enter a file name (for example the date in reverse – '20170122' for 22nd January 2017) in the file name box and click the save icon. By entering the date in this way, it is easier to list the files in date order on a PC.

The information will now be transferred. During the transfer process the screen representation on the UltrasonUSB program will say "Fetching…" and display the record number that is being downloaded from the unit.




**Open the saved file and check that the data is correct BEFORE clearing the logs on the ultrasonic cleaner.**

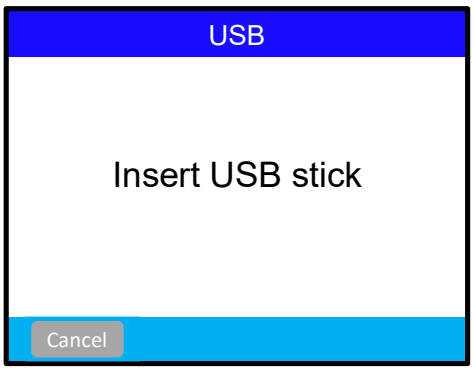
# *log to USB drive…*

The unit is capable of transferring the records from its internal memory to a USB memory stick.

From the home screen press Settings

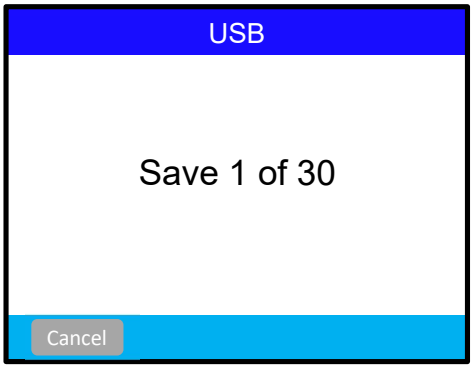
From the Main menu select Logs

From the Logs menu select Logs to USB drive and press Select




Unscrew the blue waterproof USB cap on the rear of the machine by turning it anticlockwise. Insert the USB stick and adaptor into the USB socket.

As soon as the stick is inserted the unit will save the data to the USB stick in the form of a Text file. The file name is LOG_YYMMDD_HHMMSS where YY is the year, MM is the month, DD is the day, HH is the hour, MM is the minutes and SS are the seconds that the log was created.





After the data has been copied remove the USB stick when prompted. Replace the blue waterproof USB cap on the rear of the machine by turning it clockwise.

**Open the saved file and check that the data is correct BEFORE clearing the logs on the ultrasonic cleaner.**

**The logs ARE NOT automatically deleted!**

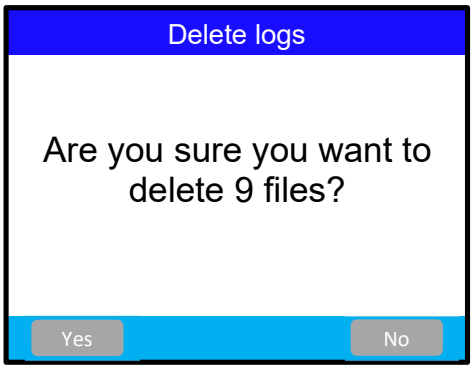
# *clearing the logs ...*

From the home screen press Settings

From the Main menu select Logs

From the Logs menu select Delete logs

The following screen is then displayed




Press Yes to clear all of the stored data or No to save the stored data and return to the Logs menu.

**WARNING. ONCE A LOG IS CLEARED IT IS NOT RECOVERABLE!**

# *limit temperature adjustment ...*

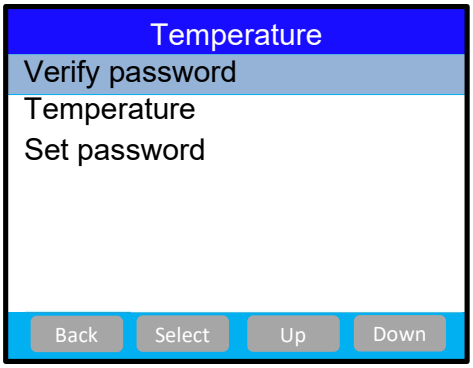
The ultrasonic cleaner is factory set to control the temperature of the fluid in the tank to 45°C. Cleaning surgical instruments above this temperature is not advised due to the coagulation of proteins, however, the limit temperature can be adjusted if required.

From the home screen press Settings

From the Main menu select Settings

From the settings menu select Temperature

You then have 3 options:

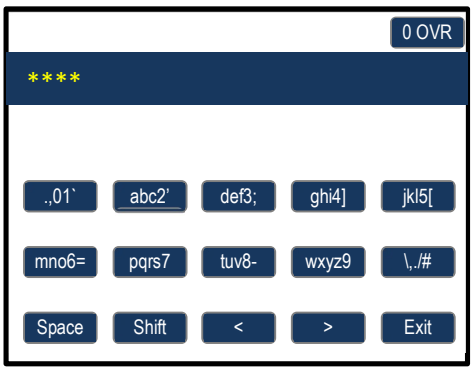



| | |
|---|---|
| Verify password | This is used to enter the password and enable access to the other two options. The factory default password is 1342. |
| Temperature | Choose this option to change the temperature once you have entered the password in Verify password. |
| Set password | Enables the password to be set. This can only be done after the password is entered in Verify password. |

# *verify password…*

Select verify password to enter the password which enables the limit temperature to be change and the password reset. The password entered by pressing the appropriate key the number of times relating to the character on that key.

For example pressing the key in the centre of the display ( tuv8- ) once will produce the letter 't', twice will produce the letter 'u', three times will produce the letter v… The number of time that the key has been pressed is displayed in the top right-hand corner of the screen. 1 OVR for once 2 OVR for twice etc.




To enter the default code of 1342:

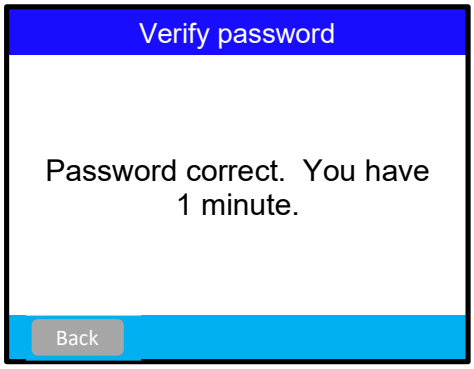
Press .,01` until 4 OVR is displayed in the top right-hand corner of the screen.

Press def3; until 4 OVR is displayed in the top right-hand corner of the screen.

Press ghi4] until 4 OVR is displayed in the top right-hand corner of the screen.

Press abc2' until 4 OVR is displayed in the top right-hand corner of the screen.

If the password is correct the following screen is displayed:

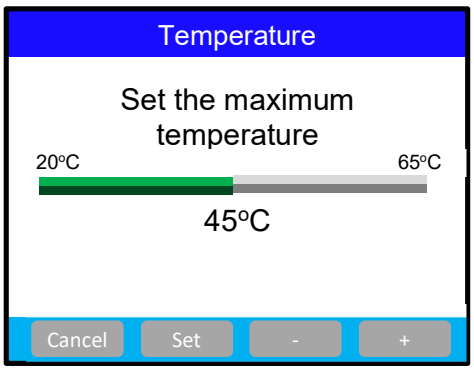



The temperature or password can now be changed.

# *changing the limit temperature ...*

Select Temperature from the Temperature menu

Press - or + to decrease or increase the temperature limit




Press Set to confirm the setting

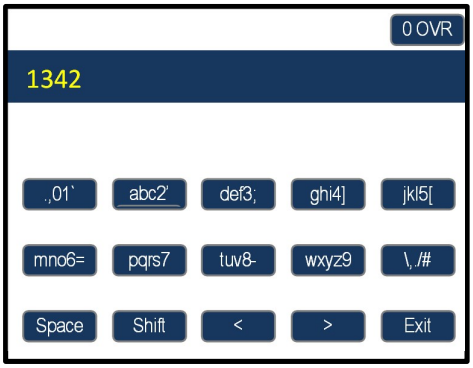
Return to the home screen by pressing Back until it is displayed.

## Changing the password...

Enter the current password via the Verify password option.

From the Temperature Menu click on Set password.

The password can then be changed in a similar way to the Verify password option.

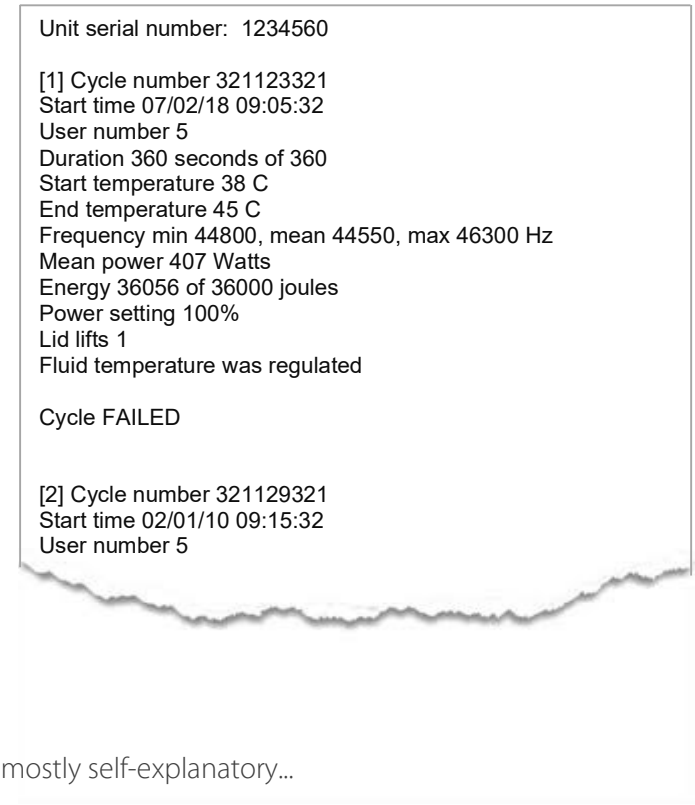



Once the desired password is displayed in the blue bar, make a note of it and press exit.

**IF YOU FORGET YOUR PASSWORD IT CAN ONLY BE RESET BY RETURNING THE UNIT TO WALKER ELECTRONICS LTD.**

# *the validation report printout explained...*

When a validation receipt is printed it may look similar to the one below:




Whilst the above is mostly self-explanatory...

Duration 360 seconds of 360. This means that the timer was set for 6 minutes and completed its full set cycle.

Frequency. This is the minimum, average and maximum frequency that the unit has operated at during the cycle.

Mean power. This indicates the average power supplied to the transducer through the cycle. A figure of below 350 watts on 100% power may indicate a problem with the unit. This could just be due to fluid level or contamination. Please call Walker Electronics Ltd for further guidance.

Energy 36056 of 36000 joules. The machine adjusts the total amount of cleaning power that has been applied during a complete cycle. If this total power for the time (known as joules) is below the expected level the machine adjusts the cleaning time and extends the cycle accordingly. For a list of messages please see page 25

# *the validation report errors and messages explained...*

| message... | explanation... |
|---|---|
| Lid Lifts X* | The lid was lifted X times during the cycle. |
| Tank fluid level alert* | A problem was detected with the cleaning fluid. This would normally be an issue with the fluid level or excessive fluid contamination. |
| Error # | P106 - The circuitry is detecting a problem with the frequency of the unit. The unit should IMMEDIATELY be taken out of service and returned for repair.<br>I106 - The Piezo (Transducer) has a fault. The unit should IMMEDIATELY be taken out of service and returned for repair. |
| Electronics overheat alert* | The internal electronics have overheated. This could be due to extended periods of use or environmental conditions. If this message regularly appears the unit should be taken out of service and returned for repair. |
| TOO HOT* | The unit was unable to control the temperature and it rose above the pre-set limit. The cycle therefore failed, as proteins coagulate at temperatures in excess of 45°C, which can lead to inadequate cleaning of instruments. |
| Fluid temperature was regulated | The fluid temperature reached the pre-set limit and the power was reduced to control this. |
| The supply was interrupted* | The mains supply was interrupted for more than 7 seconds. If the power interruption is less than 7 seconds the unit continues the cycle. |
| Cycle FAILED | The cycle failed. All items above marked * will cause a cycle to fail. |
| Cycle PASSED | All machine parameters were correct for correct cleaning and the cycle passed. |

# *screen messages and error messages...*

There are several messages that may be displayed by the unit. These may be in normal operation or under fault conditions. These errors are either for information or can be dealt with by the user.

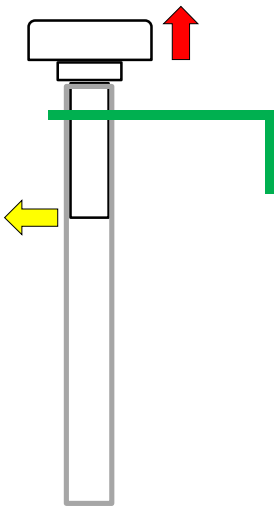
| message... | explanation... |
|---|---|
| Ready | The unit is ready to perform a cycle |
| Degassing | The fluid in the tank is being degassed. The length of time remaining for the cycle is displayed in the bottom right hand side of the screen |
| Running | The ultrasonic cycle is running. |
| Starting | The unit is checking that the fluid parameters are correct and waiting for the next full clock second before proceeding with the next operation. |
| Paused Lid | The lid is lifted or not correctly seated. |
| Printer off line | There is a problem with the printer or the connection between the bath and the printer. Check that the printer is attached and turned on and set online. Check that the lead is securely in the back of the ultrasonic cleaner and the printer. |
| Printer timeout | The ultrasonic checked that the printer was available and started printing but an error occurred and it was not able to complete the operation. |
| Service due in X days | The ultrasonic requires a service in X days to comply with HTM0105 and CQC regulations.<br>Contact Walker Electronics Ltd for service details. |
| Service overdue by X days | The ultrasonic is overdue for its HTM01-05. Contact Walker Electronics Ltd for service details. |
| Cyclelog is full | This will appear on the display after 100 cycles have been completed and stored in memory. The information should be downloaded or printed and stored for future reference.<br>If this message is ignored the oldest cycle information WILL BE LOST AND NOT RECOVERABLE. |
| Regulating temperature | The unit is attempting to regulate the fluid temperature as it has reached the pre-set limit (see page 19). The power is reduced to control this. |

| message... | explanation... |
|---|---|
| TOO HOT | The unit was unable to control the fluid temperature and it has risen above the pre-set limit. Replace or allow the cleaning fluid to cool. |
| MOSFET overheat | The internal electronics have overheated. This could be due to extended periods of use or environmental conditions. Allow the unit to cool for 30 minutes before trying the cycle again. If this message regularly appears the unit should be removed from service and returned to Walker Electronics Ltd for inspection. |
| Check fluid | A problem with the cleaning fluid was detected. This would normally be an issue with the fluid level or excessive fluid contamination. Fill the tank to the correct level with fresh fluid. |
| Lid is open | The lid is not in place or incorrectly seated. There may also be a problem with the sensor or lid. Remove and replace the lid. If the problem persists remove the unit from service and return to Walker Electronics Ltd for repair. |
| Lid is closed | The lid is correctly positioned and a cycle can be started. |
| Cycle passed or cycle failed | Either the unit operated correctly and the cycle passed all parameters or the cycle failed and should be repeated. A list of reasons for failure is printed on page 23 of this handbook. |
| Extended | The expected number of joules (watt.second) fell below that expected and the time has been increased by the machine accordingly to ensure correct cleaning of the load. This is normally closed by the fluid reaching the limit temperature. |

# *draining the unit…*

The unit is fitted with a drain pipe on the left-hand side of the unit. This drain pipe also shows the level of the fluid within the tank.

During normal use the drain pipe should be clipped into the holder with the stainless-steel end bung in place as shown below:



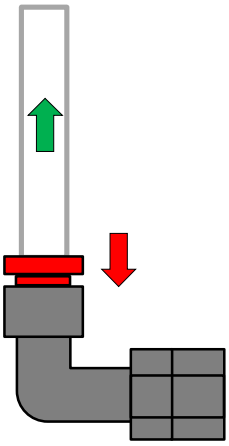
To drain:

- Unplug the unit from the mains and ensure the USB and printer socket caps are in place.
- Remove the bung by pulling in the direction shown by the red arrow.
- Pull the pipe from the pipe holder (green) in the direction shown by the yellow arrow.
- Pull the pipe down and allow the fluid to drain.

When the unit has drained, replace the pipe by clicking it into the holder on the tank and replace the stainless-steel bung by pushing it firmly into the end of the draining pipe.

It may be necessary to manually finish the draining process. This can be done by tipping the unit using the handles.

The outer drain pipe may become cloudy during normal use. Should this happen it is not detrimental to the operation of the unit, however you may wish to replace this for cosmetic purposes.



The pipe can be replaced as follows:

- Drain the unit as instructed above.
- Place the unit on a firm surface.
- Make sure the pipe is unclipped from the holder on the tank.
- Firmly push the releasing ring show in red in the direction of the red arrow.
- Whilst doing that firmly pull the pipe in the direction of the green arrow being careful not to catch the pipe holder on the tank.
- Replace the pipe by moistening the end of the new pipe and firmly pressing it into the lower pipe holder.

# *Do's and Don'ts with the ultrasonic…*

## PLEASE READ THE FOLLOWING VERY CAREFULLY AS FAILURE TO COMPLY MAY INVALIDATE YOUR GUARANTEE

1. DO NOT use water alone in the tank when operating the unit, as a wetting agent is required for correct transference of ultrasonic energy. See page 29 of this handbook for a list of suitable cleaning agents. When using any cleaning fluid please read the directions CAREFULLY before use.
   MSDS for all Walker Electronics Limited fluids are available online at ww.walkerelectronics.co.uk

2. DO NOT operate the unit without fluid in the tank.

3. DO keep the tank free from sediment.

4. DO NOT drop the unit or subject it to shock or impact.

5. DO NOT immerse the unit in water or any other liquid.

6. DO NOT use acid, bleach or any corrosive substance in the stainless-steel tank, as they may attack the metal. DO NOT use any highly flammable substances in the tank.

7. DO NOT place your hands in the fluid while the unit is operating.

8. DO NOT pour very hot or boiling water into the tank as this could cause damage to the transducers.

9. DO keep the lid on during use and at all other times when feasible. This will prevent splashes and reduce aerosol production.

10. DO NOT drop any item into the tank as this may cause damage to the transducer. Always place the item/s gently into the tank and ALWAYS use the basket.

11. DO disconnect the mains supply or isolate the supply before:

    - Emptying fluid from the tank
    - Filling the tank with fluid
    - Moving the unit
    - Removing the base screws*
    - *NO USER SERVICEABLE PARTS ARE CONTAINED IN THE UNIT

12. DO keep the case as dry as possible. NEVER allow fluid to run down the case or around the IEC socket and RS232/USB outlet areas.

13. DO NOT operate ANY switches when your hands are wet.

14. DO keep the special waterproof RS232 and USB connector covers on when not in use.

15. DO use the correct accessories with the unit. DO NOT use any glass or other containers in place of the recognised beaker.

16. The unit should be operated in an environment as follows:

    - Temperature: 5°C to 40°C
    - Humidity: 10% to 80% (Non-condensing)

17. After long periods of operation, the top of the tank and fluid may get quite warm. This is quite normal.

18. In the event of failure/emergency, disconnect the mains supply by removing the plug from the mains socket.

19. It is advised that in the interests of staff comfort the user should move at least one metre away from the unit once it is operating. The unit produces ultrasonic pressure. This may be harmful however no limits have been set.

20. DO NOT Flash test this equipment.

21. Refer to Walker Electronics publication "periodic tests and how to perform them" for instructions on daily, weekly, monthly, quarterly and yearly tests. This information is also available on the Downloads section of our website www.walkerelectronics.co.uk

**IF THE EQUIPMENT IS NOT USED AS SPECIFIED IN THIS HANDBOOK THE PROTECTION PROVIDED BY THE EQUIPMENT MAY BE IMPAIRED.**
**THIS LIST IS NOT EXHAUSTIVE.**

# *cleaning fluids…*

Walker Electronics Limited has been developing and manufacturing cleaning fluids for over 60 years.

Ultrasonic cleaning must be performed with the correct solution. An incorrect solution will slow down the cleaning process, cause poor results and may even result in damage to the ultrasonic bath.

Below are 2 of our most popular dental cleaning solutions. We have a complete range to clean most surgery items, however if you are unsure of which is the correct cleaning solution for you – give us a call. We are here to help you!

## WELzyme green enzymatic cleaner

WELzyme green has been specially formulated to quickly break down organic matter and protein residues from instruments, glassware and endoscopes.

Using WELzyme green in our ultrasonic cleaning baths enhances their performance and helps remove contaminants from even the hardest to reach crevice.

**WELzyme green has also been designed to be as kind as possible to the planet. With NO PLASTICS the product is biodegradable and the packaging is made from recycled cardboard and printed using water-based inks.**

We recommend the use of WELzyme green in **ALL** of our ultrasonic cleaners.

# *Maintenance…*

**THE UNIT CONTAINS NO USER SERVICEABLE PARTS. NO ATTEMPT SHOULD BE MADE TO ENTER THE UNIT AS THIS MAY INVALIDATE ANY WARRANTY AND/OR SERVICE CONTRACT WARRANTY.**

## At the end of each daily session…

The unit should be emptied and the tank rinsed thoroughly with clean water. The lid should also be rinsed with clean water. Both the lid and the tank should then be sprayed with a non-corrosive bactericidal solution and wiped with disposable paper towel or just wiped with a non-corrosive bactericidal wipe. The unit should then be dried thoroughly with disposable paper towel. It is advisable to leave the lid OFF to allow the unit to dry thoroughly.

The outer case can be wiped with a clean damp microfibre cloth and then again must be thoroughly dried with disposable paper.

The drain tube should be inspected for leaks which may occur from the bottom joint. Push the tube firmly into the angled joint at the base should a leak be suspected.

Regularly inspect the drain pipe and replace if contaminated. Replacements are available from Walker Electronics Ltd.

## Once a week…

The outer case of the unit should be sprayed with a non-corrosive bactericidal solution and wiped with a clean damp microfibre cloth, and then thoroughly dried with disposable paper towel. The case should then be wiped with a disposable paper towel and a small amount of mineral oil. It should be wiped in the direction of the 'grain' of the metal (horizontally). Care should be taken not to allow large amounts of oil to build up around the edges of the front or rear labels as this may lead to degradation of the adhesive.

Current evidence suggests that Alcohol is shown to bind blood and proteins to stainless steel therefore the use of Alcohol wipes is NOT advised.

It is essential to return the unit for yearly inspection/validation and replacement of internal drain pipes.

**Failure to return the unit for a yearly inspection will invalidate the warranties.**

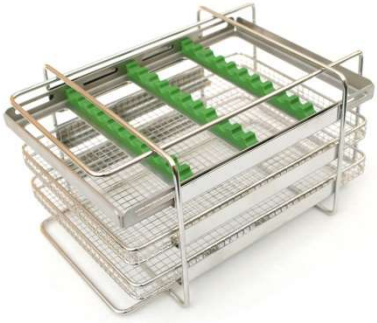
There is no need to clean the basket/holding rack, as this is done during normal use however it is advised to regularly inspect the item for damage and replace if necessary.

# *accessories and spare parts...*

Replacement parts and accessories are available for your unit. These include beakers and beaker stands for cleaning small and intricate items such as burs. Replacement or additional lids, baskets and instrument trays are also available.

**Holding Rack.**

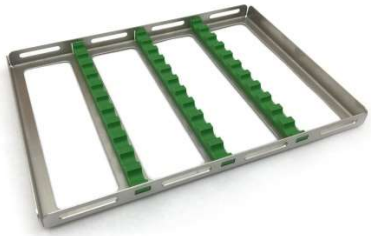
One of these is supplied with the unit. Holds a combination of 3 instrument trays or baskets.
Instrument trays can be supplied with coloured inserts for multiple surgery identification



Instruments tray and baskets are available separately.

Baskets holds large item such as scissors or pliers.

Trays hold up to 11 individual instruments.



Please visit www.walkerelectronics.co.uk for the complete range of accessories and cleaning fluids.

Should you not have access to the website or are unable to find your requirements please call a member of our UK team on 01636 892410.

# *ultrasonic cleaner specifications…*

The H105 is manufactured by Walker Electronics Limited in Collingham, Newark, Nottinghamshire, UK. All repairs are carried out by us on this site too. We guarantee to provide service and repairs for 10 years from date of manufacture however we are currently offering this service to units manufactured from the year 2000.

The case is constructed to our exacting specification in Lincolnshire UK using stainless steel complying with BS1449. The aluminium chassis complies with BS1470 and the stainless-steel tank with BS304. All units comply with the requirements of BSEN61010-1.

Walker Electronics philosophy is to use as many UK sourced components as possible. Where possible, any subcontracted work is manufactured in the UK.

| | | |
|---|---|---|
| Model type | : | H105 |
| Serial number | : | See page 36 |
| Rated voltage | : | 220-240 Volts AC, 50-60 Hz |
| Tank dimensions (mm)* | : | 295 long x 230 wide x 150 deep |
| External dimensions (mm)* | : | 385 long x 335 wide x 265 high |
| Working capacity | : | 6.0 litres |
| Maximum capacity | : | 8.0 litres |
| Weight** | : | 6.25 kg |
| Typical generator peak output*** | : | 820 watts |
| Typical power consumption*** | : | 450 watts |
| Operating frequency*** | : | 48 kHz +/- 2 kHz |

* Dimensions and weight are approximate. Internal dimension is taken at the top of the tank. Dimensions at the base are smaller. External dimensions include the feet, lid and protruding sockets, draining parts and handles.

** Excluding accessories such as lid and basket.

*** Dependent on tank loading, fluids used and mains voltage. Refer to the in-built monitor for accurate instantaneous power consumption and frequency. The typical power consumption and typical generator peak output is based on the power being set to 100%.

## *guarantee…*

This unit has been carefully manufactured and tested in England using quality assured components. It is guaranteed against faulty workmanship and materials for a period of 3 years# from the date of purchase. In addition, the Transducer Bonding is guaranteed for a further 2 years. In the unlikely event that a failure should occur, the unit will be repaired or replaced* free of charge when returned postage paid to the address below within the guarantee period. This guarantee DOES NOT include deliberate or accidental damage or failure resulting from misuse, damage in transit or failure by the user to comply with the enclosed list of Do's and Don'ts on pages 25 and 26 of this handbook. (This list is not exhaustive).

Your statutory rights under common law are in no way affected by this guarantee.

For service, in or out of the guarantee period please return the unit postage paid to:

Service Department,
Walker Electronics Limited,
Collingham, Newark,
Nottinghamshire, NG23 7LA, U.K.
Tel: 01636 892410
email: sales@walkerelectronics.co.uk
or visit the website: www.walkerelectronics.co.uk

When returning your unit please ensure that the package contains a covering letter stating when and where you purchased the unit and a description of the problem encountered. If the unit is within the guarantee period, please enclose proof of purchase.

A decontamination certificate should be enclosed if the unit has been used in a hazardous environment. This can be downloaded at www.walkerelectronics.co.uk

* Repair or replacement is at the discretion of the manufacturer.
# Warranty only valid if the unit is serviced yearly by an approved service agent

# *user numbers and names…*

Use this section to write down your user name next to your user number. This is an essential part of the validation process.

Enter your user number when prompted by the unit.

If you require more than 40 users (maximum is 99) attach an additional sheet in the back of this handbook.

| | | | |
|---|---|---|---|
| 1 | | 21 | |
| 2 | | 22 | |
| 3 | | 23 | |
| 4 | | 24 | |
| 5 | | 25 | |
| 6 | | 26 | |
| 7 | | 27 | |
| 8 | | 28 | |
| 9 | | 29 | |
| 10 | | 30 | |
| 11 | | 31 | |
| 12 | | 32 | |
| 13 | | 33 | |
| 14 | | 34 | |
| 15 | | 35 | |
| 16 | | 36 | |
| 17 | | 37 | |
| 18 | | 38 | |
| 19 | | 39 | |
| 20 | | 40 | |

# *HTM01-05 advice…*

When the unit is used in a dental surgery it is **essential** that the following tests are completed to comply with HTM0105 and CQC regulations.

| Period | Type of validation required | Definition |
|---|---|---|
| Daily | Visual inspection of instruments | Visually inspect one batch of instruments after cleaning and rinsing for signs of contamination |
| Weekly | Protein reside test<br><br>Load check strip test | Protein residue test – test after cleaning and rinsing one batch of instruments.<br><br>Load check strip – to test the efficiency of the unit. Test with clean fluid and ensure red dye is removed from strip |
| Quarterly | As per weekly test plus<br>Foil ablation test | |
| Yearly | Return to Walker Electronics for validation | |

**IT IS IMPORTANT that Weekly, Monthly and Quarterly tests are carried out on the unit as detailed in HTM01-05 and in the document entitled "Periodic tests for ultrasonic cleaners" which is available online at www.walkerelectronics.co.uk in the downloads section**

**Failure to comply with the Daily, Weekly, Quarterly and yearly test is in contravention of HTM0105 and CQC regulations and could lead to prosecution by the relevant authorities.**

# *HTM01-05 certificate of validation…*

This is to certify that the below ultrasonic cleaner has been manufactured, inspected and tested in line with the schedule specified in HTM 01-05 and found to comply

Signed

Brian J Everitt
Managing Director
Walker Electronics Limited

This certificate is valid for 1 year from date of purchase

Ultrasonic cleaner model H105 operator's handbook version 3 dated 12th March 2024

In accordance with its policy of progressive product design, Walker Electronics Limited reserves the right to change the product specifications without prior notice.



Company Registered in England No. 01010602. Managing Director Mr Brian J Everitt.