

T105 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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what is ultrasonic cleaning?...

The audible frequency range of the human ear is from about 16 Hertz (16 Hz) to 16 Kilohertz (16 kHz), Middle C is 216 Hertz, a grasshopper call is 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.

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. 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.

A 'generator' located within the ultrasonic cleaner develops the high frequency power. This supplies the power to the Piezo or 'transducer', which creates the sound waves in the tank. 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.

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 T105 ultrasonic cleaning unit
- 1 x stainless steel lid
- 1 x stainless steel basket
- 1 x 1M IEC mains lead
- Sample cleaning fluid
- 1 x Flash drive and adaptor containing at least the following files:
 - Ultrasonic cleaner Model T105 handbook (this handbook)
 - Ultrasonic cleaner periodic testing advice
 - Product catalogue

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 plug.

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 as described on page 10 of this handbook.

Installation and operation...

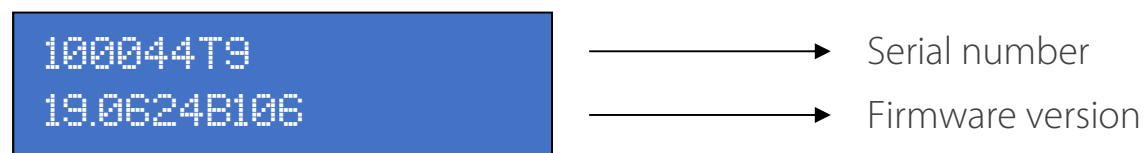
The ultrasonic cleaner should be mounted on a level surface. It must not be exposed to extreme temperatures, moisture, strong vibrations, and dusty or corrosive environments.

To operate the unit first place the appropriate fluid in the tank. This should be selected from the list on pages 27 and 28 of this handbook.

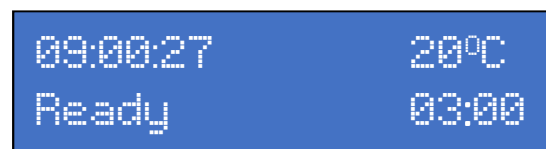
Fill the tank to the recommended depth. This is indicated by the ridge or fill level around the tank.

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 1 second a screen similar to the following is displayed



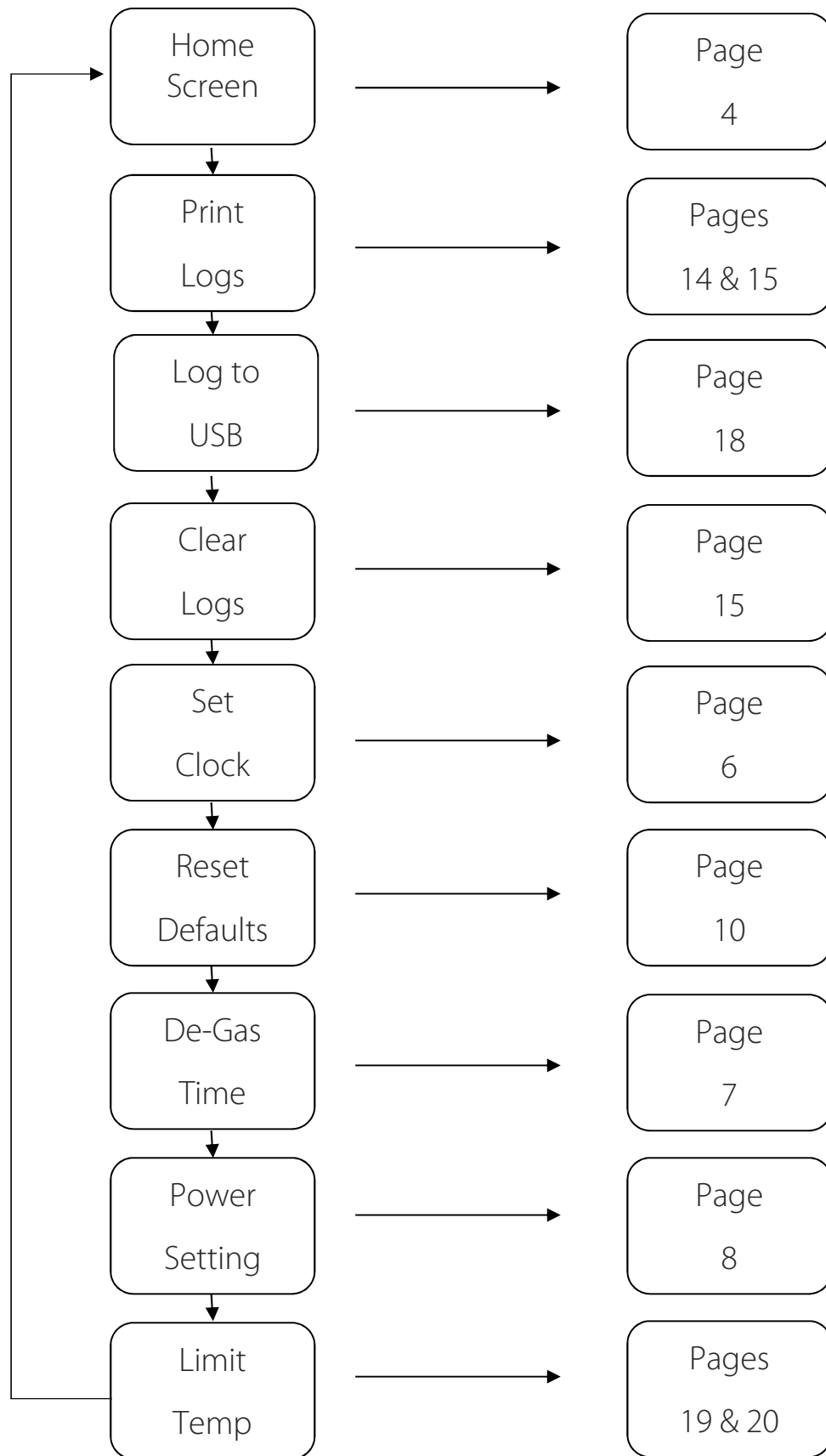
This is referred to as “The home screen” throughout this manual.

The internal clock time is displayed in the top left-hand corner of the screen. It is in 24H clock format (hours: minutes: seconds). If this is incorrect please follow the instructions on page 6 of this handbook.

The current fluid temperature is displayed in the top right-hand corner of the screen in degrees centigrade.

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

the mode menu...



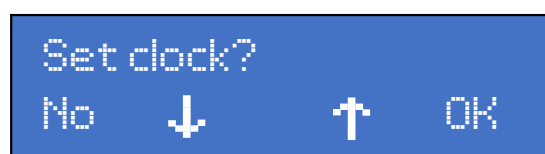
first time use...

Depending on the length of time since the unit was last connected to the mains, the clock may or may not be correctly set on delivery. On a full charge the internal battery will power the clock for approximately 3 months.

The clock may also be set by connecting to a PC (See page 16 and 17.)

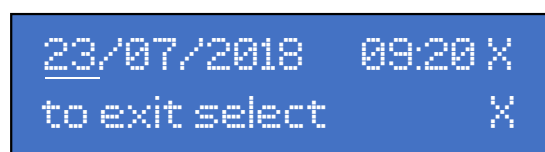
setting the clock...

Press the  key until the following screen is displayed.



To return to the Home Screen press the  key

Press the  key to move to the next menu item. Press the  key to return to the previous menu item. Press the  key and the following screen is displayed:



Use the  and  keys to move the cursor between the date, month, year, hour and minute. The  and  keys decrease and increase the selected digit.

Once the date and time are correctly displayed, move the cursor to the X on the screen and press and release the  key. The time starts counting from the moment the  key is pressed.

The date and time are now set.

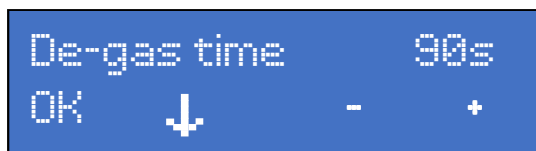
the degas cycle...

Degassing is the process of releasing air that is trapped within fluid in 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 factory set degas cycle is 90 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 time...

From the home screen press and release the ➤ key until the de-gas screen is displayed:



Adjust the time by pressing the ⬅ or ➕ keys until the required time is displayed.

The time may be quickly adjusted to 300 seconds by holding the ➕ keys and pressing and releasing the ⬅ key. Similarly, the time can be quickly adjusted to 0 seconds by holding the ⬅ key and pressing and releasing the ➕ key.

When the required time is displayed, press and release the ⬅ key to save the setting and return to the home screen. Press the ⬅ key to move to the next section.

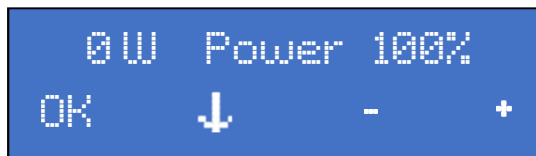
adjusting the power...

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.

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 the  key until the power setting screen is displayed:



To decrease the power level setting, press and release the  key.

To increase the power level setting, press and release the  key.

When the required power level is displayed, press and release the  key to save the setting and return to the home screen or press the  key to move to the next menu item.

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, which should be lowered into the tank. The loaded basket 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 and NOT on the base of the tank.
- Ensure that instruments with hinges or joints are fully open.
- 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.

restoring the factory default settings...

This option will set the following values to their factory default:

Cycle time	:	3 minutes
De-gas time	:	90 seconds
Power	:	100%
Printer	:	19200 baud with handshaking

It will NOT reset the password to the limit temperature setting. If you have changed and forgotten this setting the unit will have to be returned to Walker Electronics Limited for re-setting.

From the home screen press the ➤ key until the following screen is displayed:

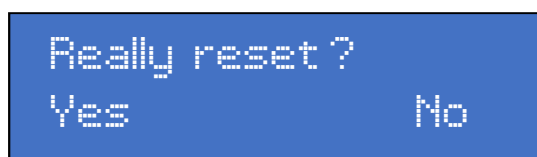


To return to the Home Screen press the ◀ key.

To move to the next menu item, press the ➤ key.

Press the ⬅ key to return to the previous menu item.

Press the ⬇ key and the following screen will be displayed:



Press the ⬇ for yes key to reset to the factory defaults. Press the ⬇ key to leave the current settings unchanged after the selection the home screen will be displayed.

operating a complete validated cycle...

Please ensure that you have followed the instructions on pages 3 and 4 “before you operate your ultrasonic cleaner and installation” and have read all of the “do’s and don’ts” on pages 25 and 26.

Place the instruments to be cleaned in the basket provided as described on page 9.

Remove the lid, lower the basket 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. 3 minutes is the default and is suitable for cleaning most dental instruments. The cycle length can be decrease or increased in 30 second divisions by pressing the  or  keys.

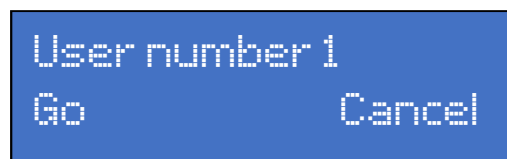
Press and release the  key (start/stop).

If the following screen is displayed:



...this indicates that the memory on the unit is full and unable to store any more information. Pressing the  key 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 pages 16 to 18 or print the information as described on page 14 and 15 of this handbook.

If memory is available the following screen is displayed:



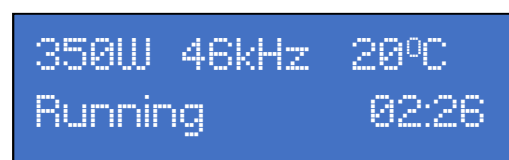
The user number can be adjusted by pressing the  and  keys. If you are a new user write your name against your user number on page 34 of this handbook. Should you wish to cancel the cycle press the  key. When the correct user number is displayed press the  key (start/stop).

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 is set above 0 seconds (see page 7), the word 'Degassing' will be displayed in the bottom left hand corner of the screen. After the degassing cycle has completed the unit will start the full cycle.

When the full cycle starts a screen similar to the one below is displayed:

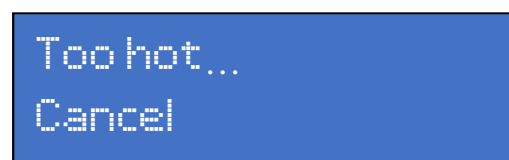


350W 46kHz 20°C
Running 02:26

In this example:

350W This means that the unit is drawing 350 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 300 - 400 watts if the power level is set to 100%. A figure below 300 watts indicates there may be a problem with the unit.

The fluid in the tank is too hot so this screen will be displayed:



Too hot...
Cancel

Either replace the fluid or wait for the fluid to cool down.

46kHz This is the operating frequency of the transducer. In this example it is 46 kilohertz. This represents a vibration of 46,000 times a second.

20°C This is the current temperature of the solution in the tank. It is rounded to the nearest degree centigrade. A reading of 20°C means the temperature is between 19.6°C and 20.5°C (inclusive).

02:26 This means the unit has another 2 minutes and 26 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 one of the two following screens will be displayed:



XXXXXXXXXX represents the unique validated cycle number.

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



Again, XXXXXXXXXX represents the unique cycle number.

The cycle could have failed for many reasons. A complete list of possible reasons can be found on page 22 of this handbook.

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

Press the  key to return to 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 limited.

A special lead is supplied with the printer. It is a grey lead, has a large silver coloured plug on one end 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 operators 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.

using a different printer...

If you are using a different printer you will need to know the BAUD rate of your printer. The printer must have a serial port. The ultrasonic cleaner must be returned to Walker Electronics Ltd together with the baud rate setting you require for reprogramming. There is an additional charge for this service.

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 HTM01-05 validation process. The records can also be downloaded and stored electronically. Please refer to pages 16, 17 and 18 for how to do this.

how to print a validation report...

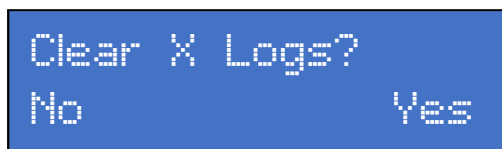
Set up and attach your printer as described on page 14. From the home screen press the  key once. The following screen is displayed:



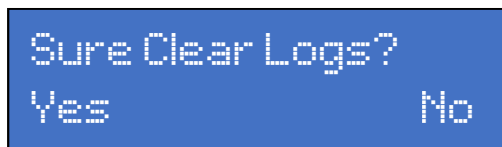
'X' represents the number of records that are currently stored in the memory and are available for printing or downloading and will be a number between 0 and 100. Press and release the  or  keys to return to the home screen. Press and release the  key to print the records. For an explanation of the printed receipt refer to pages 21 and 22.

clearing the logs...

The user is prompted to clear the logs after the print has finished. This option can also be selected from the menu. Printing or downloading the logs DOES NOT automatically delete them from the unit's memory.



Press the  key to clear all of the stored data or the  key to save the stored data. The display will then return to the home screen.



press the  for yes to clear the logs or press the  to keep the logs and return to the home screen.

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

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

Go to www.walkerelectronics.co.uk and visit the downloads section. In the Driver downloads section click on the T105 driver and program. 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 it does pressing the buttons on the ultrasonic cleaner.

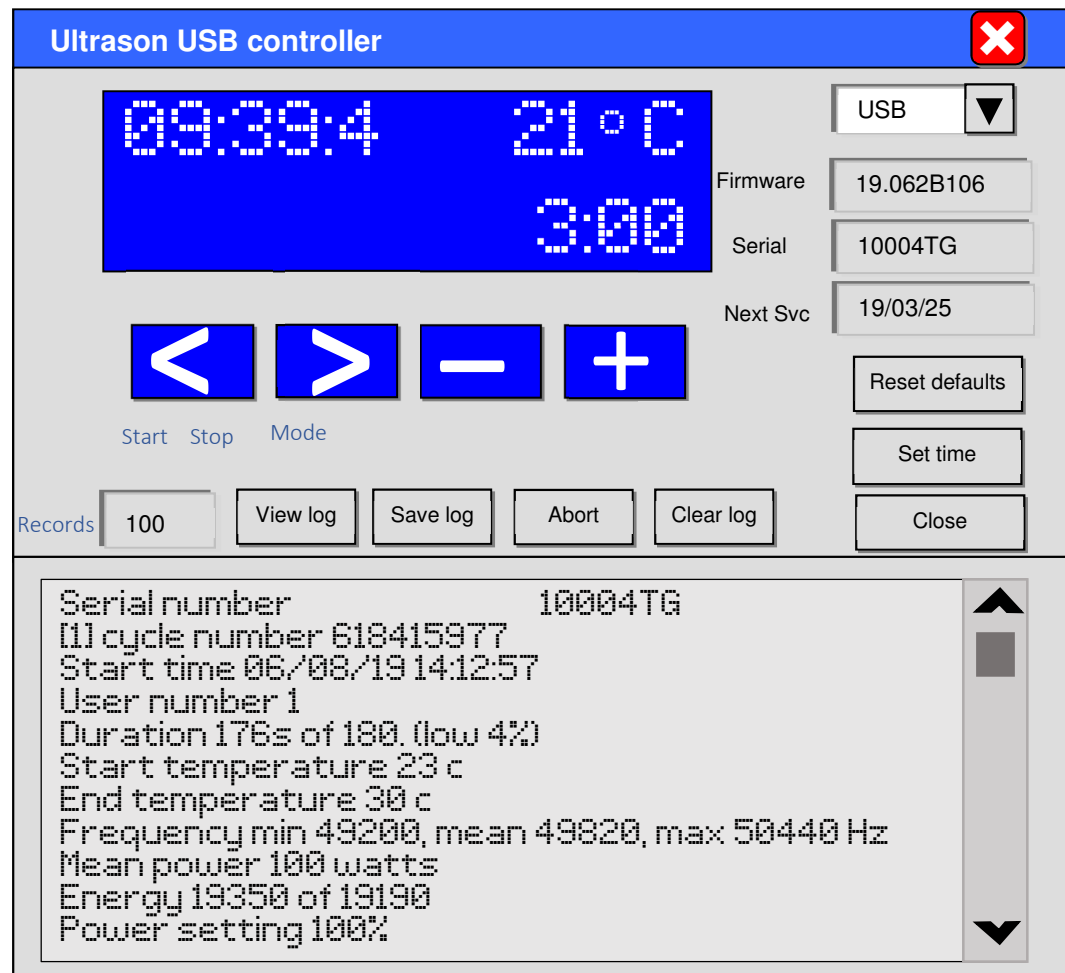
In addition, you can quickly and easily set the date and time stored on the unit. By pressing the 'Set time' icon on the screen the PC's date and time are transferred to the unit. Before proceeding with this operation please ensure that the PC date and time are correct.

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

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 – '190325' for 25th March 2019) in the file name box and click the save icon.

The information has now been transferred and saved.

Open the saved file and check that the data has been saved before pressing the Clear log icon and then Yes to confirm.

log to USB drive...

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

From the home screen press the  key twice. The following screen is displayed:



To return to the Home Screen press the  key

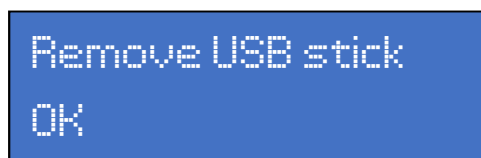
Press the  key to return to the previous menu item.

Press the  key and the following screen is displayed:



When the USB stick is inserted the log is copied to the stick and recorded as 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 records have been copied the following screen will be displayed.



Press the  key and remove the USB stick, and then replace the waterproof cap.

entering and changing the temperature adjustment security code...

From the home screen press the ➤ (mode) key until the temperature limit screen is displayed:



The current fluid temperature is displayed in the top left-hand corner of the screen. The current set limit temperature is displayed in the top right-hand corner of the screen.

Press ⊕ and then the following screen will then be displayed:

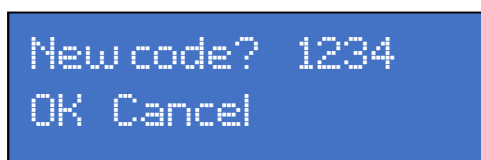


The code is factory set at 1234. To enter the code, press the ⊖ key once, the ⊕ key twice, the ⊖ key 3 times and then press the ⊕ key four times. Press the ⬅ key to confirm you have entered the code. If the code was incorrect the following screen will be displayed



Press the ⬅ key to re-enter the code or the ➤ key to skip and return to the home screen.

If the code was correct the following screen will be displayed: press the ⬅ key to retry or the ➤ key to cancel and return to the home screen.



to change the code...

To change the code, enter it by pressing the  and  keys as previously described. For example... to enter a new code of 2314 press the  key twice, the  3 times, the  key once and then the  key four times. The new code you have chosen will be displayed in the top right hand. Press the  key to skip this information and NOT save the code. Or press the  to save this code.

It is important to write the code down as if it is lost the machine must be returned to the manufacturer for reprogramming.

to change the temperature...

After the code has been correctly entered, you have 1 minute to adjust the temperature limit as required. Pressing the  key will increase the temperature limit and pressing the  key will decrease the temperature limit.

temperature control in operation...

When the temperature is 0.95 °C below the set limit the power is reduced to 95% and the following message is flashed up on the screen:



Regulating temp

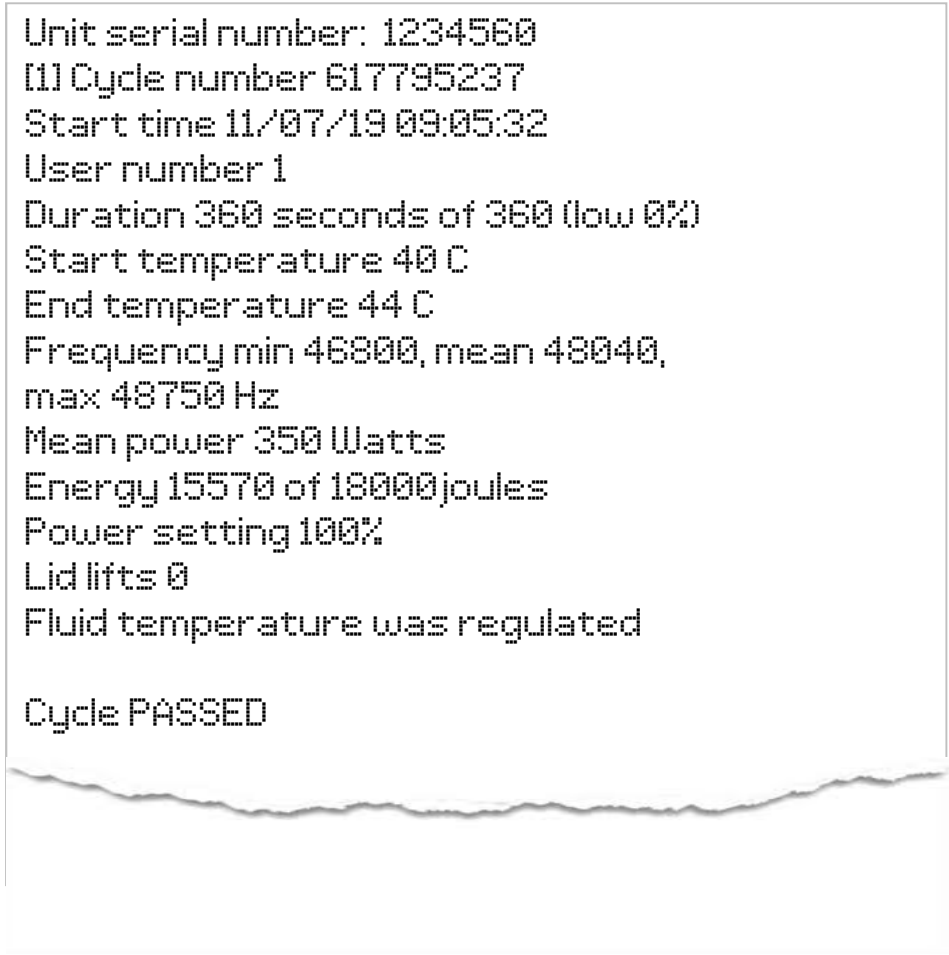
If the unit is still unable to control the temperature the power is further reduced to 90% when the fluid is 0.9 °C below the set temperature and so on until the unit reaches 0.5 °C below the set temperature when the power is reduced to 5%. Should the unit still be unable to control the temperature and the fluid temperature reaches that of the set temperature the following message is flashed up:



Tank Overheated

the validation report printout explained...

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



```
Unit serial number: 1234560  
[1] Cycle number 617795237  
Start time 11/07/19 09:05:32  
User number 1  
Duration 360 seconds of 360 (low 0%)  
Start temperature 40 C  
End temperature 44 C  
Frequency min 46800, mean 48040,  
max 48750 Hz  
Mean power 350 Watts  
Energy 15570 of 18000 joules  
Power setting 100%  
Lid lifts 0  
Fluid temperature was regulated  
  
Cycle PASSED
```

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.

Mean power. This indicates the average power supplied to the transducer through the cycle. A figure of below 100 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 15570 of 18000 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.

<i>message...</i>	<i>explanation...</i>
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.
Piezo fault alert*	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.
Fluid exceeded limit temperature*	The unit was unable to control the temperature and it rose above the preset 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 preset 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

<i>message...</i>	<i>explanation...</i>
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, however an error occurred and it was not able to complete the operation.
Service overdue by X days	The ultrasonic requires a service to comply with HTM0105 and CQC regulations. Contact Walker Electronics Ltd for service details.
Service due in x days	The ultrasonic requires a service in X amount of days to comply with HTM0105 and CQC regulations. 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 validation purposes. If this message is ignored the oldest cycle information WILL BE LOST.

<i>message...</i>	<i>explanation...</i>
Regulating temperature	The unit is attempting to regulate the fluid temperature as it has reached the preset limit. The power is reduced to control this. (see page 12)
Tank overheated	The unit was unable to control the fluid temperature and it has risen above the preset limit. 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 taken out of service and contact Walker Electronics Ltd.
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 or there is a problem with the sensor. Remove and replace the lid. If the problem persists remove the unit from service and return 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 re-initiated. A list of reasons for failure is printed on page 22 of this operator's 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.
Error xxx	The unit has may have a fault. IMMEDIATELY contact Walker Electronics for further advice.

basic 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 pages 27 and 28 of this handbook for a list of suitable cleaning agents. When using any cleaning fluid please read the directions CAREFULLY before use. COSHH data sheets are available for all Walker Electronics Limited fluids online at the downloads section of www.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 transducer.
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:

- a. Emptying fluid from the tank
- b. Filling the tank with fluid
- c. Moving the unit
- d. Removing the base screws*

*NO USER SERVICEABLE PARTS ARE CONTAINED IN THE UNIT

12.DO keep the front panel dry. NEVER allow fluid to run down the unit case or around the cable inlet/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:

Temp: 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.

20.DO NOT Flash test this equipment.

21.Refer to Walker Electronics publication "Ultrasonic cleaner periodic testing advice" for HTM01-05 advice. This information is also available in the Downloads -> Advice Sheets section of our website www.walkerelctronics.co.uk

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

cleaning fluids...

Walker Electronics Limited have been developing and manufacturing cleaning fluids for over 50 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.

If you are unsure of which is the correct cleaning solution for you – give us a call. We are here to help you!

WELzyme and WELzyme PLUS⁺

HTM01-05 compliant - WELzyme has been specially formulated with proteolytic enzymes to quickly break down organic matter and protein residues from instruments, glassware and endoscopes.

Supplied in, a 1 litre dose bottle or a 5-litre pump dose bottle.



WELsol and WELzyme green

WELzyme green and WELsol are both packaged in polyvinyl alcohol sachets (PVA) sachets, a synthetic polymer that dissolves in water, providing a convenient, safe and economical method of delivery. This film is considered nontoxic and poses no issues to the environment, oceans, fish or wildlife.

WELzyme green contains a **biodegradable** powder with proteolytic enzymes which quickly break down organic matter and protein residues from instruments, glassware and endoscopes. WELsol contains the same biodegradable powder without the enzymes.

The box is manufactured with fully recycled Cardboard and printed with water-based inks. This means that WELzyme green and WELsol are kind to the environment and contain NO PLASTICS.



WELzyme green and WELsol help you to comply with the HTM1015 which states that when using an ultrasonic cleaner there must be “a means to control the detergent’s concentration”. Each sachet is a measured dose suitable for the T105 ultrasonic cleaners ensuring no product is wasted.

Supplied in a box containing 50 sachets



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 and basket 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.

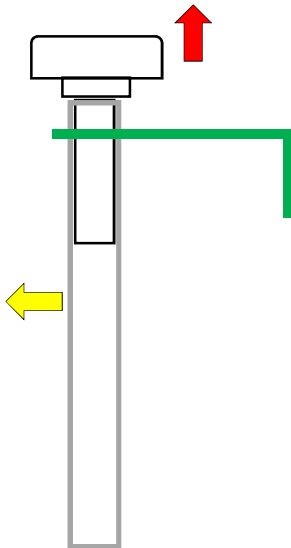
The outer case can be wiped with a clean damp microfibre cloth and then again must be thoroughly dried with disposable paper.

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.

draining the unit...

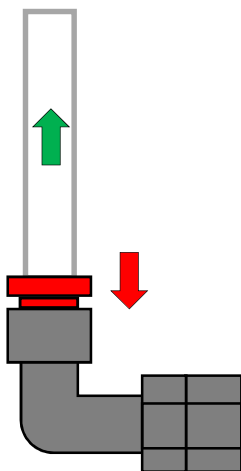
The unit is fitted with a drain pipe on the left-hand side of the unit. This drain pipe also shows the level of the fluid within the tank. During normal use the drain pipe should be clipped into the holder with the stainless-steel end bung in place as shown below:



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 shown 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.

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 and baskets are also available.

All the products you require for HTM0105 testing are also available. Please visit www.walkerelectronics.co.uk



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 T105 is manufactured by Walker Electronics Ltd in Collingham, Newark, Nottinghamshire, UK. The case is constructed 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.

Model type	:	T105
Serial number	:	See page 36
Rated voltage	:	220-240 Volts AC, 50-60 Hz
Tank dimensions (mm)*	:	300 long x 145 wide x 150 deep
External dimensions (mm)*	:	353 long x 238 wide x 325 high
Working capacity	:	4.7 litres
Maximum capacity	:	5.7 litres
Weight	:	5.75 kg
Typical generator peak output**	:	850 watts
Typical power consumption**	:	400 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

** 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.

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 30 users (maximum is 99) attach an additional sheet in the back of this handbook.

1		16	
2		17	
3		18	
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15		30	

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 Residue test Load check strip test	Protein residue test – test after cleaning and rinsing one batch of instruments 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 tests Foil Ablation test	As per weekly tests The ultrasonic activity can be investigated by the erosion pattern created on aluminium foil exposed in the tank.
Yearly	Return to Walker Electronics for validation	

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

PLEASE STICK
LABEL HERE
SUPPLIED
WITH YOUR
ULTRASONIC
CLEANER
WHEN NEW

On behalf of Walker Electronics Limited



Brian J Everitt
Managing Director

This certificate is valid for 1 year from date of purchase
(Customer to retain proof of purchase)

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 “ultrasonic cleaner periodic testing advice” which is available online at www.walkerelectronics.co.uk in the downloads ... advice sheets section.

To ensure FULL compliance to HTM01-05 it is recommended that the unit be used with Walker Electronics Limited WELzyme, WELsol or WELzyme green. These comply with HTM 01-05 section 10.21, which states that there should be “a means to control the detergents concentration”

Ultrasonic cleaner model T105 operators handbook version 12

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

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