



# Digital Ultrasonic Bath

xub Series 230V

Operating Manual



EN

If you have any feedback on Grant products or services, we would like to hear from you. Please send all feedback to:

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Grant ultrasonic baths are manufactured in the United Kingdom and conform to exacting international standards.

# Safety instructions

## Use of products

The following products are covered by this operating manual:

- xub5, xub10, xub12, xub18, xub25 230V

The products listed above are a series of general-purpose ultrasonic cleaning baths designed for indoor use by a professional user.

## Electrical

*Connect the unit to a 230VAC fully earthed supply..*

*It would be dangerous to operate an ultrasonic bath without an earth connected.*

*The unit is supplied with a removeable power lead rated at 5A. Do not use a power lead rated less than 5A.*

*The removeable mains lead is the disconnect device and should remain accessible while the unit is in use.*

*Ensure that excess mains cable is stored neatly.*

## General use

Ensure that the bath contains liquid before you switch it on.

Always use a basket to support items to be cleaned.

*Not doing so may damage the bath and invalidate your warranty.*

Do not place hands or fingers in the bath.

Care should be taken when operating the bath at higher temperatures as external surfaces may become hot.

Never use toxic, flammable, acidic, caustic or corrosive solutions in the bath.

Avoid moving the bath when it is full of water.

Read the whole of these instructions. Safety may be impaired if they are not followed.

Contact Grant or its agent for advice on cleaning techniques or detergents.

Grant will not be responsible for damage or injury caused by incorrect use of the equipment.

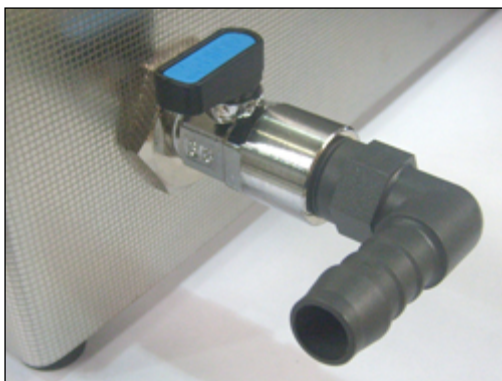
## Installation

The following parts and accessories are included with the Grant digital ultrasonic bath:

- 1 x basket
- 1 x lid
- 1 x MC card and MC USB card reader
- 1 x 2m length of drain hose
- 1 x hose tail
- 1 x Grant M2 detergent sample
- 3 x power cables (UK, EU, AUS)

### How to install

Screw the hose connector into the drain valve located on the rear of the unit.



Locate the unit close to a drain or sink.

Connect one end of the drain hose to the hose connector, and locate the other end over a drain or sink.

Connect the mains lead into a suitable mains socket.

Ensure that the mains plug and the switch are easily accessible.

Your Grant digital ultrasonic bath is now ready to use.

## Controls

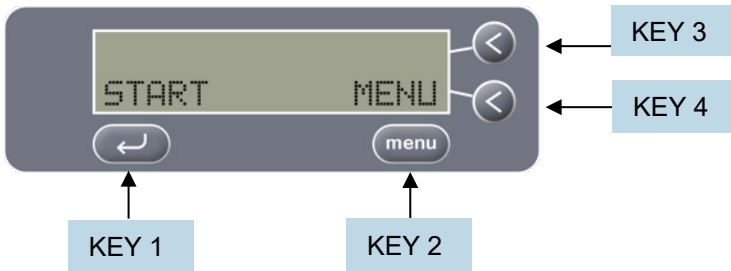
Ensure your Grant digital ultrasonic bath is plugged into a 230VAC fully earthed supply.

Once plugged in, switch on your Grant digital bath via the power on/off switch at the rear of the unit.

The switch will then illuminate.



The Grant digital bath is operated through a menu driven control system:



The different keys perform the following functions:

**KEY 1:** ↵ – Starts and ends the ultrasonic cycle

**KEY 2:** Menu – Scroll through the menu

**KEY 3:** Up/On – Adjust the settings in the options menu

**KEY 4:** Down/Off – Adjust the settings in the options menu

## Quick guide

Pour cold water into the bath so that it reaches the liquid level sensor but does not go over the maximum fill line.



← Maximum  
Fill Line

Add the required dose of detergent (see page 24).

Switch on the machine via the switch at the rear of the unit, just above the electrical mains lead.

Press the “←” key to accept the programmed cleaning cycle settings and start the cleaning cycle.

At the end of the cleaning cycle, remove the basket from the bath and rinse the cleaned items under clean running water. The lid can be inverted and the basket placed on top to catch excess liquid as the items dry.

### **REMEMBER**

- Always keep the bath full of liquid when in operation
- Do not put hot water above 50°C into the bath
- Always use the basket
- Never expose hands, fingers or other body parts to cleaning solutions
- Never use toxic, flammable, acidic, caustic or corrosive solutions
- Never breathe the fumes from strong solutions
- Rinse the items in clean water once the cycle is complete

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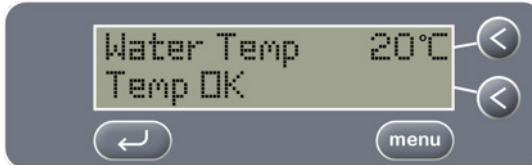
Subjecting the bath to improper treatment or misuse will invalidate the warranty.

## Operator instructions

When the Grant digital bath power is turned on and the bath is full of liquid, the following screens will display alternately.



When the water temperature is at or above the temperature set, the message "Temp OK" will display.

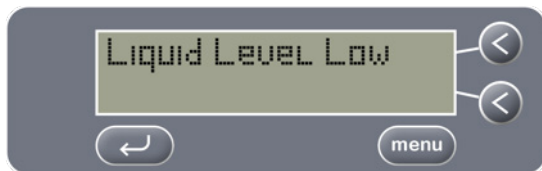


To immediately start the cycle using the already set cleaning parameters, press the ← key.

The Grant digital bath remembers the set parameters from the previous cycle. If the operator wants to run the same cleaning cycle, it is therefore not necessary to run through the menu each time.

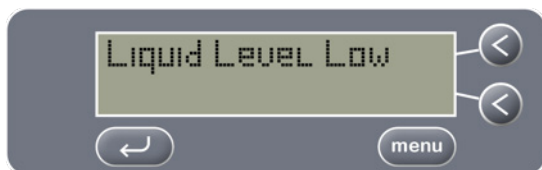


When the Grant digital ultrasonic bath power is turned on and the liquid level is too low, the following screen will display.



The level sensor can be disabled for specialist cleaning applications where deionised (DI) water is used (see page 19).

When the bath is filled with liquid to the correct level, you will be given the option to degas (see page 25).



By choosing YES, your Grant digital ultrasonic bath will run an automatic degas cycle. The following screen will display.



The degassing process is to remove all bubbles from the water as these impede the cleaning performance. Once all of the bubbles have come to the surface, complete the degassing cycle by pressing the ↵ key.

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**Note:** If the machine detects low liquid level for more than 5 seconds, it is assumed that the bath has been filled with fresh water, and you will be given the option of running a degas cycle.

## Operator menu

A number of the Grant digital ultrasonic bath cleaning parameters can be altered.

To access the options menu and scroll through the various changeable parameters, press the MENU key, when the following screen is displayed.



To scroll through the menu, press the MENU key. To exit the MENU at any time, press the ↩ key.

## Screen 1: Setting the temperature

Your Grant digital ultrasonic bath is fitted with a thermostat and heaters to ensure the temperature of the cleaning liquid is maintained at the set temperature.



Use the UP and DOWN keys to accurately set the desired temperature of the cleaning liquid between ambient and 70°C.

During normal use, the water heaters in your Grant digital ultrasonic bath will switch on if the cleaning liquid temperature is lower than the set temperature. [As a safety feature, your Grant digital ultrasonic bath will only turn on when the bath is full of liquid.]

Please note that during normal operation, ultrasonic energy will heat the cleaning liquid by up to 15°C per hour.

Your Grant digital ultrasonic bath cannot cool the cleaning liquid. If the liquid temperature becomes too hot, you must either let it cool down, or refill the bath with cooler water.

When the correct temperature is selected, use the MENU key to move to the next screen.

**SAFETY NOTICE:** When the temperature is set above 54°C, the case of the Grant digital ultrasonic bath will become hot and care should be taken when touching the case.



A warning label is included in the literature pack that may be applied to the unit if deemed necessary following a risk assessment (see ISO 13732-1:2006).

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## Screen 2: Setting the cycle time

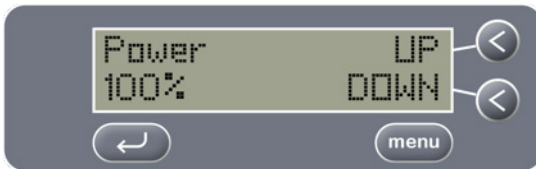
Your Grant digital ultrasonic bath is factory pre-set with a cycle time of 15 minutes. Use this screen to amend the cycle time. Use the UP and DOWN keys to scroll through the numbers in order to increase or decrease the time.



When the desired cycle time has been selected, use the MENU key to move to the next screen. This time setting will be saved until changed again in the Operator menu.

## Screen 3: Setting the power level

Your Grant digital ultrasonic bath allows the power level of the ultrasonic activity to be adjusted. This allows the cleaning cycle to be accurately tailored to the specific cleaning application.



Use the UP and DOWN keys to scroll through the numbers between 50 and 100%. When the desired power level has been selected, use the MENU key to move to the next screen.

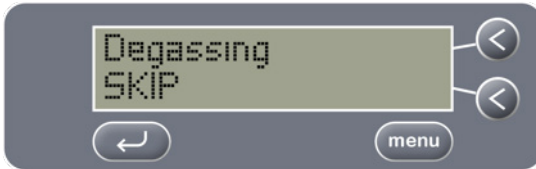
## Screen 4: Degas

As well as the automatic degas function that you are offered when the machine is first switched on, this menu function allows you to run a degas cycle whenever a cleaning cycle is initiated.



Use the ON and OFF keys to select the required option (see page 25)

If you switch the degas function ON, your Grant digital ultrasonic bath will run a degas cycle every time the cycle start key is depressed.



Once the desired option is selected, press the MENU key to move to the next screen.

## Screen 5: Frequency leap

Your Grant digital ultrasonic bath is equipped with Frequency LEAP technology to provide more homogeneous ultrasonic cleaning activity throughout the whole tank.

Using advanced software and generators, the Grant digital ultrasonic bath uses Frequency LEAP to create a pseudo-random leaping action between a wider frequency range, reducing standing waves and improving the cleaning action.

For different cleaning applications the operator can choose between Frequency LEAP and fixed frequency ultrasonic activity.

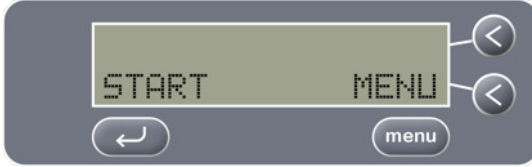


Use the ON and OFF keys to select the required option.

Once the correct option is selected, press the MENU key to move to the next screen.

## Starting the cycle

Once all the Operator Menu options have been selected, the following screen will display.



The Grant digital ultrasonic bath is now ready for use.

Press the ← key to begin the cleaning cycle.

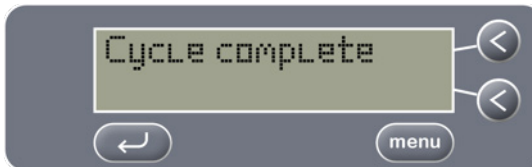
When the Grant digital ultrasonic bath is in operation, the following screen will display.



(The actual time and temperature may show different values.)

The operator can abort the cycle at any time by pressing the ← key.

On successful completion of the cycle, the following message will be displayed for three seconds.



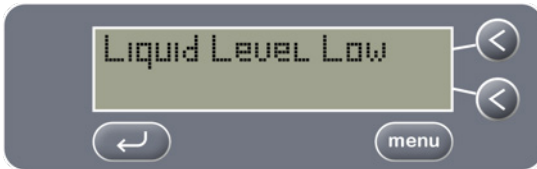
## Cycle abort modes

If the cycle is aborted, the reason for the failure will be displayed.

If the operator aborts the cycle, the following screen will be displayed.

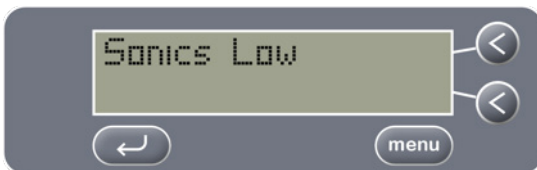


If the Level sensor is set to ON, and the liquid drops below the required level during operation, the cleaning cycle will stop and the following screen will be displayed.



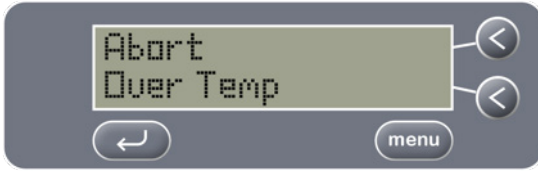
The Grant digital ultrasonic bath will not operate again until the tank is filled to the correct level.

If the power to the ultrasonic generator should fall below a certain level during operation, the cleaning cycle will stop and the following screen will be displayed.

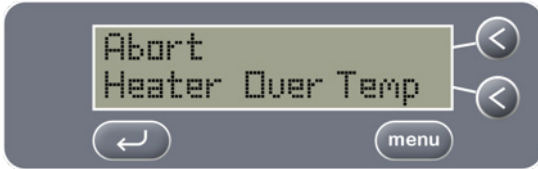




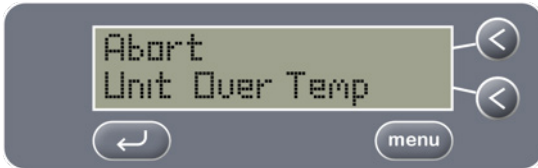
If the liquid temperature exceeds the allowed maximum of 70°C (160°F), the following screen will be displayed



If the internal heater exceeds its allowed maximum, the following screen will be displayed.



If the unit overheats due to prolonged use, the following message will be displayed



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In each instance of a cycle abort, the cycle count in the Advanced Menu will still log the cycle as complete.

## Advanced menu

The Advanced Menu allows different settings to be specified which may not require regular changes and also allows the usage history of the individual Grant digital ultrasonic bath to be seen.

To access the advanced menu, press and hold Keys 3 and 4 together.

The following screen will then appear:

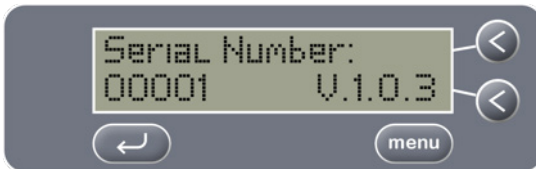


In order to scroll through the settings available in the Advanced Menu, press the MENU key.

You may exit the Advanced Menu at any time by pressing the ← key.

## Screen 1: Serial number

The first screen shows the unique serial number of your Grant digital ultrasonic bath and the version of software (The numbers in the image below will not reflect your model).



Press the MENU key to move to the next screen.

## Screen 2: Time used

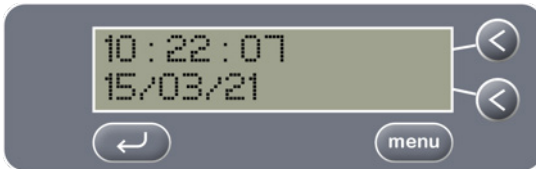
This screen shows the total time your Grant digital ultrasonic bath has been in use in days, hours and minutes; i.e. the sum of all the cleaning cycle times since new.



For example, the screen above shows that the bath has been in use for a total of 2 days, 5 hours and 27 minutes.

## Screen 3: Clock

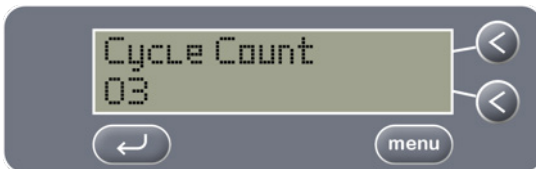
The Grant digital ultrasonic bath is fitted with a real time clock. This is factory set to the correct time and date, but can be changed by the operator.



To change the time and date, scroll through the settings by pressing the MENU key and amend by pressing the UP and DOWN keys. When all the settings are correct, press the MENU key to move to the next screen.

## Screen 4: Cycle count

The second screen shows the number of cycles which the Grant digital ultrasonic bath has run since new.



The cycle count shows all cycles which the bath has begun and includes those cycles which are not completed; i.e. those cycles aborted by the operator or because the liquid level was low.

## Screen 5: Low power

In its factory pre-set mode, the Grant digital ultrasonic bath will maintain the set liquid temperature. This means that it is consuming power when sitting idle (i.e. when the sonics are not running).

The Grant digital ultrasonic bath can be set to save power when not in use.



Setting Low Power to ON means that after five minutes of inactivity, the Grant digital ultrasonic bath will enter its SLEEP mode – the screen illumination will power down, and the internal water heater will not operate.

The Grant digital ultrasonic bath uses less than 10 Watts of power whilst in SLEEP mode.

By setting Low Power to OFF, the Grant digital ultrasonic bath screen will maintain the set liquid temperature; i.e. when the liquid temperature falls below the specified setting, the heaters will automatically switch on, meaning the bath is immediately ready for use when required.

When the desired option is selected, use the MENU key to move to the next screen.

## Screen 6: Liquid level sensor

The Grant digital ultrasonic bath is fitted with a liquid level sensor to ensure it is not under-filled prior to or during the cycle. This ensures that the optimum cleaning process can occur and potential damage to the tank is minimised.



The level sensor is a resistive device, so will not detect liquids with very low conductivity such as pure deionised (DI) water.

The level sensor can be disabled for specialist applications where deionised (DI) water is used.

Use the ON and OFF keys to set the Low Level function. When the desired option is selected, use the MENU key to move to the next screen.

### Screen 6a: Liquid Level Sensor

When the OFF button is pressed and the ↩ key is selected to continue, a message will appear to check that the operator has filled the tank up to the level indicated (see page 5).



When the level sensor is disabled the liquid set temperature is automatically reduced to 5°C. The set temperature may be increased by entering the MENU system (see page 9).

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### Screen 6b: Liquid Level Sensor

If 'NO' is selected an instruction will appear requesting the tank be filled before use.

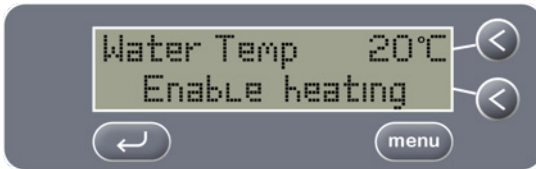
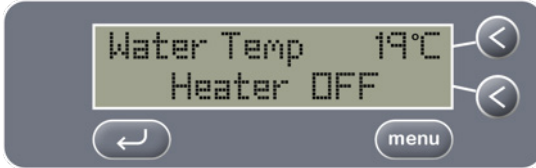


## WARNING

Setting the liquid level sensor to OFF means that the Grant digital ultrasonic bath will operate as if the bath were full of liquid.

This means that without water, the heaters will continue to operate and the surface inside the bath will become extremely hot. It is therefore the operator's responsibility to ensure that the tank is filled with sufficient water when the liquid level sensor is disabled.

If the Grant digital ultrasonic bath operates with insufficient liquid, the heaters will be disabled as a safety feature and the following screens will be displayed:



To continue using the Grant digital ultrasonic bath, refill with liquid up to the liquid level sensor and switch the unit off and on again.

**If the bath is run dry this will invalidate the warranty on the Grant digital ultrasonic bath.**



A warning label is included in the literature pack that may be applied to the unit if deemed necessary following a risk assessment (see ISO 13732-1:2006).

## Screen 7: Portable appliance testing

The Grant digital ultrasonic bath is provided with this screen to make portable appliance testing easier.



When the ON button is pressed, both the heater and the ultrasonic generator will turn on, irrespective of any other programmed settings.

You will then be sure that the Grant digital ultrasonic bath is operating in the mode required for accurate portable appliance testing.

Portable appliance testing should be conducted with water in the bath.

Once you have completed your tests, press the OFF button.

## Using the memory card

The Grant digital ultrasonic bath is fitted with a memory card (MC) slot which allows digital validation of every cleaning cycle.

Simply insert an MC card into the slot located at the front of the Grant digital ultrasonic bath to ensure that information on each cycle is saved to the MC card.

The Grant digital ultrasonic bath is supplied with an MC card which allows easy transfer of the cycle information from the ultrasonic bath to a PC.

In order to record the cycle parameters, always ensure the MC card is inserted into the Grant digital ultrasonic bath prior to turning the power on.



By recording to an MC card and transferring to a PC, a permanent electronic record of the cleaning cycle parameters can be saved.

The information is saved as a CSV file. This is automatically saved as `cycles.csv` on the MC card and will open in any text editing software.

The information saved includes cycle number, cycle time, cycle temperature and validation of the ultrasonic activity achieved during the cycle.



## Recording and downloading the data

### System Requirements:

- Windows 2000 SP4; XP SP2
- Mac OS 10.1.2+
- USB High Speed Hub Port (500mA)
- One available USB port

To record the saved data:

Always ensure the MC card is inserted into the Grant digital ultrasonic bath prior to turning the power on.

The MC card will save the cycle results of each cycle until the card is removed.

Once you are ready to download the information, remove the MC card. Insert it into the MC card reader provided and plug the card reader into the USB port of the PC.

There is a file on the MC card which is already set up to provide a template for recording the data – cycles.csv. Open this file and the data will display in spreadsheet format.

The file will show information of every cycle run while the MC card has been in place in the Grant digital ultrasonic bath.

To ensure that the next cycle information is recorded on the MC card, switch off the Grant digital ultrasonic bath and reinsert the MC card before switching the bath on again.

The data will only be saved to the MC card, if it is inserted before the machine is switched on. If the MC card is inserted when the Grant digital ultrasonic bath is already switched on, the data will not be recorded.

## Ultrasonic detergents

Detergents are a vital component in the ultrasonic process, aiding in the removal and loosening of debris from the surfaces of items placed in the tank while also intensifying the power of the ultrasonic activity.

Grant offers a specially formulated ultrasonic detergent for use in many applications.

**Grant M2** is a general purpose detergent for all plastics, glass and metals (except aluminium and other soft metals) which is also suitable for use on medical instruments.

## Dosing Matrix (ml of detergent per tank)

Grant recommends a dosage of between 2 and 5% for all detergents.

|              | Detergent dose (ml) |      |
|--------------|---------------------|------|
|              | 2%                  | 5%   |
| <b>xub5</b>  | 90                  | 225  |
| <b>xub10</b> | 190                 | 475  |
| <b>xub12</b> | 250                 | 625  |
| <b>xub18</b> | 350                 | 875  |
| <b>xub25</b> | 500                 | 1250 |

**Directions for use:** Add 25-50ml of M2 per litre of water in the ultrasonic bath.

**Warning:** **Grant M2** may cause etching to aluminium and other soft metals.

**Shelf life:** 6 months when stored in a cool, dark environment.

**Precautions for use:** In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. If swallowed, seek medical advice immediately and show this label. Keep out of reach of children.

Refer to Safety Data Sheets available from Grant

**Grant M2** is biodegradable.

# Technical information

## The need to degas

In order to allow optimum ultrasonic activity, the gases present in ordinary tap water need to be driven out of the cleaning solution.

The time needed to degas the liquid varies depending on the amount of gas present in the liquid and the quantity of water in the tank. Grant recommends a degas period of at least 10 minutes.

During the degas cycle, you will see bubbles of gas forming on the inside of the bath, and slowly rising to the surface. Degassing is complete when you can no longer see these bubbles.

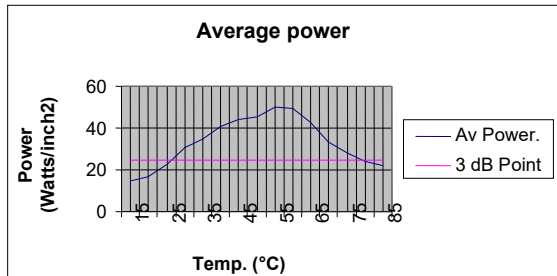
Another indication that the liquid in the bath has degassed is an increase in the appearance of ‘cold boiling’ at the liquid surface.

Once the liquid is degassed, the bath is immediately useable and will run the cleaning cycle.

## The effect of heat

Heating the liquid in the bath will aid the cleaning process.

Normally a temperature of between 30 to 60°C is sufficient to accelerate the process. You will see from the graph that optimum cleaning will be obtained at 60°C.



If you are using your bath to clean medical equipment, it is recommended to limit the liquid temperature to 35°C. This will avoid “baking” proteins.

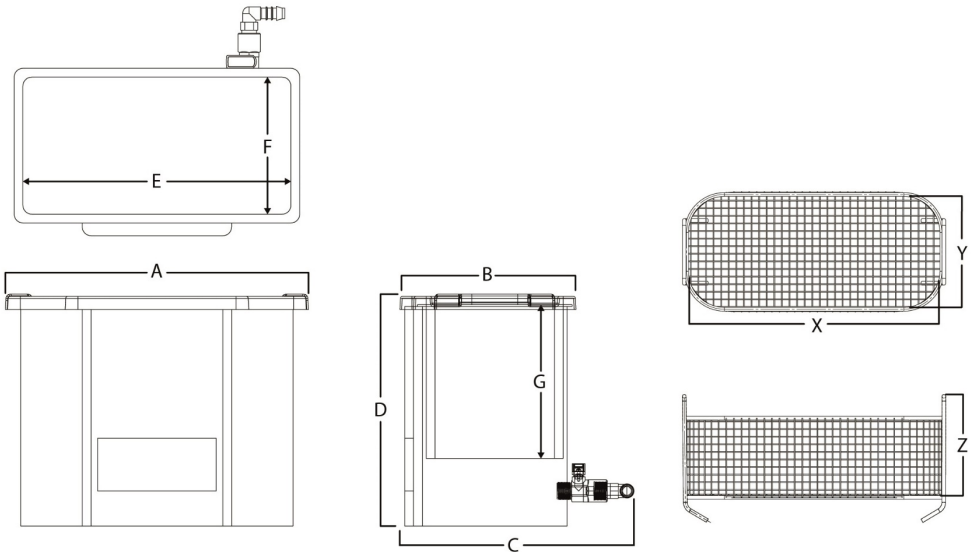
Ultrasonic activity itself will heat up the liquid at a rate of approximately 10-15°C per hour if in continuous use. In order to heat the liquid in the tank at a faster rate, it is recommended to run the ultrasonics as well as turn on the heating.

## Cleaning time

The Grant digital ultrasonic bath is factory preset with a cleaning time of 15 minutes. Some components may take longer or shorter to clean effectively depending on the contaminants and the level of contamination.

# Specifications

|                           |   |
|---------------------------|---|
| Ambient Temperature       | 5 to 40°C   |
| Maximum relative humidity | 80% R.H. in room temperatures up to 31°C decreasing linearly to 50 % R.H. at 40°C |
| Altitude above sea level  | Up to 2,000 m (6,500 ft)  |
| Operating Environment     | Indoor use only   |



|       | Tank External Dimensions (mm) |     |     |     | Tank Internal Dimensions (mm) |     |     | Basket Internal Dimensions (mm) |     |     |
|-------|-------------------------------|-----|-----|-----|-------------------------------|-----|-----|---------------------------------|-----|-----|
|       | A                             | B   | C   | D   | E                             | F   | G   | X                               | Y   | Z   |
| xub5  | 340                           | 255 | 325 | 265 | 300                           | 150 | 150 | 265                             | 115 | 110 |
| xub10 | 545                           | 245 | 315 | 265 | 505                           | 140 | 150 | 465                             | 100 | 110 |
| xub12 | 345                           | 355 | 435 | 365 | 300                           | 240 | 200 | 260                             | 200 | 160 |
| xub18 | 375                           | 410 | 490 | 365 | 330                           | 300 | 200 | 295                             | 260 | 160 |
| xub25 | 550                           | 410 | 490 | 365 | 505                           | 300 | 200 | 465                             | 260 | 160 |

|                        |                 |
|------------------------|-----------------|
| Mains supply:          | 230V @ 50-60 Hz |
| Pollution degree:      | 2               |
| Installation category: | II              |

Note: Mains supply voltage fluctuations are not to exceed  $\pm 10\%$  of the nominal supply voltage

|                      |           |
|----------------------|-----------|
| Ultrasonic frequency | 32-40 kHz |
| Heater range         | 5 to 70°C |

|              | Working capacity (litres) | Tank capacity max. (litres) | Total Power (W) | Ultrasonic power (W) | Heating power (W) |
|--------------|---------------------------|-----------------------------|-----------------|----------------------|-------------------|
| <b>xub5</b>  | 4.5                       | 5                           | 250             | 100                  | 150               |
| <b>xub10</b> | 9.5                       | 10.5                        | 450             | 200                  | 250               |
| <b>xub12</b> | 12.5                      | 14                          | 500             | 200                  | 300               |
| <b>xub18</b> | 17.5                      | 18.5                        | 750             | 300                  | 450               |
| <b>xub25</b> | 25                        | 28                          | 1050            | 400                  | 650               |

## Fuses

The IEC C14 electrical socket on the rear of the unit is fitted with 2x T5A (slow blow) fuses. Never fit a fuse of a higher rating.

## Maintenance

It is important to keep your bath clean. Not only will contaminated liquid reduce the performance of the bath, it may also damage it. Change the cleaning liquid regularly. Your cleaning process will determine how often to change the liquid – the more soiled your items, the more often you will need to change the liquid. Change the cleaning liquid at least daily.

The base of the bath generates the ultrasonic activity by vibrating at very high speeds. If any contaminants are in contact with the bath, they act as an abrasive, causing wear on the metal surface. In extreme cases, the bath will develop holes and start to leak. Portable appliance testing should be conducted with water in the bath.

There are no user serviceable parts inside. All service and repair should be referred to qualified Grant engineers only

Service contracts for your Grant digital ultrasonic bath are available from Grant.

## Returning equipment to Grant

All equipment being returned to Grant for service, repair or other reason **MUST BE FULLY DECONTAMINATED** prior to return and include a certificate of decontamination.

Failure to do so may result in additional charges or the equipment being returned to the user/sender at Grant's discretion.

Ultrasonic baths which have been used in medical/healthcare applications should be decontaminated/packaged in accordance with MHRA guideline document DB2003 (5) 'Management of Medical Devices prior to Repair, Service or Investigation'. This can be found at [www.mhra.gov.uk](http://www.mhra.gov.uk).

This policy is designed to protect the health and safety of Grant employees, reducing the risk of potential injury or infection.

More information on decontamination guidelines, as well as copies of decontamination certificates can be found at [www.grantinstruments.com](http://www.grantinstruments.com)

If you require further information, please contact the

Grant Service Department  
Grant Instruments (Cambridge) Ltd  
Shepreth, Cambridgeshire  
SG8 6GB  
UK

Tel: +44 (0) 1763 260 811

Email: [service@grantinstruments.com](mailto:service@grantinstruments.com)

## Warranty

The warranty on Grant ultrasonic products applies to defects appearing within **36 months** of the date of sale because of faulty material or manufacture. Genuine defective items returned to Grant or its agent's premises will be replaced or repaired free of charge at their discretion.

The warranty is extended to two years on transducer assemblies and to 5 years on the bonding process. If the transducers or bonding material are exposed to liquid or cleaning chemicals, the warranty will be invalidated.

The warranty does not apply to

- normal wear and tear
- damage caused by misuse
- non-observance of maintenance, service or connection instructions
- damage caused by the use of toxic, flammable, acidic, caustic or corrosive chemicals or liquids not recommended by Grant

The user should familiarise themselves with this instruction booklet before operating the equipment and should apply to Grant or its agent for advice on cleaning techniques or chemicals.

Grant will not be responsible for damage or injury caused by incorrect use.

Statutory rights are not affected.

# Compliance

## WEEE directive

Grant Instruments complies fully with the Waste Electrical & Electronic Equipment (WEEE) regulations 2013. We are a member of the B2B compliance scheme (Scheme Approval Number WEE/MP3338PT/SCH), which handle our WEEE obligations on our behalf. Grant Instruments have been issued with a unique registration number by the Environmental Agency, this reference number is WEE/GA0048TZ.

For information regarding WEEE collections in the UK please contact our B2B Compliance Scheme directly on 01691 676 124.

For other countries please contact your equipment supplier.

For General WEEE information please visit: [www.b2bcompliance.org.uk](http://www.b2bcompliance.org.uk)

## RoHS directive

All the products covered by this manual comply with the requirements of the RoHS Directive (Directive 2011/65/EC including 2015/863).

## Electrical safety and electromagnetic compatibility

All the products covered by this manual comply with the requirements of the Low Voltage Directive (2014/35/EC) for electrical safety and the EMC directive (2014/30/EC) for electromagnetic compatibility.

## REACH Regulation

This product does not contain any SVHCs at greater than 0.1% that have to be identified in accordance with Regulation (EC) No 1907/2006 and therefore does not have an entry in the SCIP database.



## Troubleshooting

Grant has a dedicated service team who are able to resolve any problems that occur with your Grant digital ultrasonic bath. However, on many occasions it is possible that the problem can be rectified by the operator.

|  |  |
|--|--|
| The unit fails to turn on (no display is shown)  | Check that the unit is plugged in and that mains electricity is present.   |
| The screen displays:<br>“Liquid Level Low”   | Fill the Grant digital ultrasonic bath with water so that it is above the fill line indicated inside the tank.<br>If you are using “pure” water (e.g. De-I or RO) ensure that the detergent has been added.  |
| The screen displays:<br>“Sonics Low”   | The Grant digital ultrasonic bath is fitted with an ultrasonic power detector, which monitors the ultrasonic activity in the bath during a cleaning cycle.<br>If the ultrasonic power drops below a certain point, the cycle will be incomplete and this message will display. This is not necessarily caused by a problem with the machine.<br>If this message displays, run another cycle to see if the problem persists.                                    |
| The screen displays:<br>“Heater OFF”<br>“Check Level”<br>“Switch Off to”<br>“enable Heating”     | The Grant digital ultrasonic bath has detected that the heaters operated above their rated temperature and has disabled the heating function. This also disables a cycle from starting. The most likely cause is the liquid evaporating when the level sensor is switched off.<br>Switch the unit off, top up the fluid above the level sensor and switch the unit on to reset the alarm.  |
| The screen displays:<br>“Unit Overheat”<br>“Please Wait”<br>“Switch Off to”<br>“reset”<br>“menu” | The Grant digital ultrasonic bath has detected that the ultrasonic generator on the unit has operated above the rated temperature and has disabled the ultrasonic function. This also disables a cycle from starting. The most likely cause is the fluid evaporating when the level sensor is switched off. Switch the unit off, allow the unit to cool for a few minutes, top up the liquid above the level sensor and switch the unit on to reset the alarm. |
| The screen displays:<br>“Over Temp”  | The Grant digital ultrasonic bath has detected that the water in the bath is above 75°C and has aborted the cycle. Please allow the liquid to cool or drain some and replace with cooler liquid.   |

If any of these problems persist, the Grant Service Department can be contacted on +44 (0) 1763 260811 or [service@grantinstruments.com](mailto:service@grantinstruments.com)

## Compliance with the Control of Noise at Work regulations

The Control of Noise at Work Regulations 2005 (the Noise Regulations<sup>[1]</sup>) came into force for all industry sectors in Great Britain on 6 April 2006. The Control of Noise at Work Regulations 2005 replaces the Noise at Work Regulations 1989.

The aim of the Noise Regulations is to ensure that workers' hearing is protected from excessive noise at their place of work, which could cause them to lose their hearing and/or to suffer from tinnitus (permanent ringing in the ears).

The level at which employers must provide hearing protection and hearing protection zones is now 85 decibels (daily or weekly average exposure) and the level at which employers must assess the risk to workers' health and provide them with information and training is now 80 decibels. There is also an exposure limit value of 87 decibels, taking account of any reduction in exposure provided by hearing protection, above which workers must not be exposed.

To help you calculate your workers' exposure, Grant publishes the noise generated by your ultrasonic cleaner on the Certificate of Test. The figure is that experienced by a worker standing in the operating position.

The full text of the Control of Noise at Work Regulations 2005<sup>[2]</sup> and the full text of the Noise at Work Regulations 1989<sup>[3]</sup> can be viewed online.

Guidance on the 2005 Regulations can be found in the free HSE leaflet 'Noise at Work'(INDG362 (rev 1))<sup>[4]</sup> and in HSE's priced book 'Controlling Noise at Work' (L108) (ISBN 0 7176 6164 4) available from HSE Books<sup>[5]</sup> or from bookshops.

[1] <http://www.hse.gov.uk/noise/regulations.htm>

[2] <http://www.opsi.gov.uk/si/si2005/20051643.htm>

[3] [http://www.opsi.gov.uk/si/si1989/Uksi\\_19891790\\_en\\_1.htm](http://www.opsi.gov.uk/si/si1989/Uksi_19891790_en_1.htm)

[4] <http://www.hse.gov.uk/pubns/indg362.pdf><sup>[5]</sup>

<http://www.hsebooks.co.uk>

## Service record

Grant recommends that your Grant digital ultrasonic bath is serviced at least once every 12 months. This record must be maintained by the engineer conducting the service.

There are no user serviceable parts inside. All service and repair should be referred to qualified Grant engineers only.

|                  |  |             |  |
|------------------|--|-------------|--|
| Date             |  | Cycle count |  |
| Engineer         |  |             |  |
| Details          |  |             |  |
| Next service due |  |             |  |

|                  |  |             |  |
|------------------|--|-------------|--|
| Date             |  | Cycle count |  |
| Engineer         |  |             |  |
| Details          |  |             |  |
| Next service due |  |             |  |

|                  |  |             |  |
|------------------|--|-------------|--|
| Date             |  | Cycle count |  |
| Engineer         |  |             |  |
| Details          |  |             |  |
| Next service due |  |             |  |

|                  |  |             |  |
|------------------|--|-------------|--|
| Date             |  | Cycle count |  |
| Engineer         |  |             |  |
| Details          |  |             |  |
| Next service due |  |             |  |

|                  |  |             |  |
|------------------|--|-------------|--|
| Date             |  | Cycle count |  |
| Engineer         |  |             |  |
| Details          |  |             |  |
| Next service due |  |             |  |

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