

## TM Series Water Baths



	Model number	Capacity	External Dimensions* W x D x H	Tank Dimensions W x D x H
<b>BA140250</b>	TM5	5 L	332 x 185 x 290 mm	300 x 150 x 150 mm
<b>BA140255</b>	TM9	9 L	332 x 270 x 290 mm	300 x 240 x 150 mm
<b>BA140260</b>	TM13	13 L	361 x 332 x 290 mm	325 x 300 x 150 mm
<b>BA140265</b>	TM20	20 L	538 x 332 x 290 mm	500 x 300 x 150 mm

\* drain tap adds 40 mm to nominal width

### Features and Benefits

- **Temperature range** Ambient +5 °C – 95 °C
- **Temperature stability** ±25 °C
- **Touch sensitive controls**
- **Auto temperature lock** to prevent unwanted adjustment by students
- **304 grade stainless steel tank**
- **Antibacterial outer coating**
- **Gated, large bore draining tap** for easy and convenient draining
- **Stainless steel perforated base tray** included
- **Concealed heater** for easy cleaning
- **UK designed and manufactured**
- **Wide range of compatible accessories** (see list towards back of manual)
- **Three year warranty**

Dear Customer,

Thank you for purchasing this piece of Benchmark<sup>®</sup> temperature control equipment. To get the best performance from your equipment and for your own safety please read these instructions carefully before use.

## General Notes

1. This product is designed for laboratory use only. Always follow good laboratory practice.
2. Fill the tank prior to connection to electrical supply.
3. Use caution when topping up or draining the tank. Basic safety protection may be affected if this product is not used in accordance with these instructions.
4. The mains supply cord fitted to this product is heat resistant and should be replaced with an equivalent type by a qualified electrician.
5. Ensure that the power supply has a safety earth (ground) terminal.
6. Ensure that the mains switch and power supply connector are accessible during use.
7. Before using any cleaning or decontamination method, please refer to the Maintenance and Cleaning section to ensure that the proposed method will not damage the unit.
8. Connect only to a power supply with the corresponding voltage to that specified on the rating label positioned on the rear of the unit.
9. Do not block ventilation slots during use, and always follow installation instructions.
10. Ensure substances being heated present to risk of a hazard (such as explosion or release of toxic or flammable gasses) or that these have been addressed. When heating substances which liberate gas, suitable extraction should be used.
11. Use only liquid specified in this manual within their specified temperature range.
12. Drain the bath before moving it.
13. We recommend using a lid when working at temperatures above 60 °C. Take care when lifting the lid as steam and hot vapours can be released.
14. Use a thermometer to check the temperature – do not touch the liquid.

## Location and Environment

The product must be placed on a smooth, level surface, preferably near a drain for emptying.

Use in a ventilated area.

Suitable for use in ambient temperatures 5 °C to 40 °C, and relative humidity 80 % at temperatures up to 31 °C, decreasing to 50 % at 40 °C.

Do not block or impede the ventilation slot, or place directly next to heat sources. Ensure there is sufficient space around the water bath to allow it to provide optimum temperature control.


## Unpacking

Remove the product from its packaging and retain over the warranty period. Included in the box is:

- Water bath
- Stainless steel perforated tray
- Power lead
- Instruction manual

Place the perforated tray into the water bath. Fit the power lead into the socket at the rear.

## Safety



**Risk of electrical shock**

Do not touch any electrical contacts or open any closure panels.

## Power Lead and Connection to Electrical Supply

Consult the rating label and check that your electrical supply is suitable.

The product must be earthed.


Where the mains supply or plug connection differs, refer to local regulations.

If in doubt, consult an electrician.

## Liquid Level

**Minimum** must cover the top of the false base by 40 mm

**Maximum** must not exceed the ridge of the tank



**Risk of electrical shock**

Always ensure the water bath is disconnected from the electrical supply before filling or draining with water.

## Suitable Liquids

For general use, we recommend:

- Distilled water
- Heat transfer liquid (the LB range is formulated for temperatures between -45 °C and 90 °C and provides complete protection from freezing and algae growth, and safeguards against corrosion)
- Virkon dissolved in distilled water has proven efficacy against bacteria (including mycobacteria), viruses, spores and fungi in a variety of independent testing using different protocols

## Operating Instructions (Classroom)

1. Ensure the stainless steel perforated base tray is fitted and fill the bath with water, following liquid level instructions.



**Do not switch on the water bath when dry.**

This will likely damage the heater, and will invalidate the warranty.

2. Connect the mains power lead to an electrical supply.
3. Turn the bath on via the green mains power switch located on the rear.
4. The bath is automatically set to run at the programmed temperature.
5. Touching any of the keys on the keypad will result in **Ln** being displayed. This indicates the keypad is locked and no changes can be made.

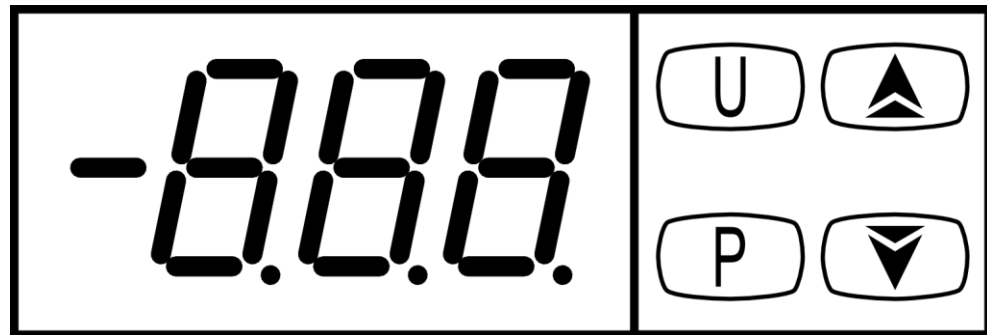


**Do not stand vessels directly onto the bath base.**

Always use a false base/shelf, otherwise damage may occur to the heaters.


## Operating Instructions (Supervisor)

1. To alter the programmed temperature setting, touch **P** and the **UP** arrow simultaneously, until **LF** is displayed\*. This indicates the keypad is unlocked.
2. Touch **P** to access the temperature setting. **SP** (set point) is displayed.
3. Use the **UP** and **DOWN** arrow keys to set the temperature required.
4. Touch **P** to confirm.
5. Controls will automatically lock again after approximately 20 seconds.



\* **P** and **UP** must be pressed simultaneously for several seconds before the unit is unlocked.  
This is to prevent accidental unlocking.

## Care and Maintenance



**Risk of electrical shock**

Disconnect the water bath from the power supply before cleaning.

Please ensure that the washing agent and sanitising agent are BSI accredited and suitable for use on laboratory equipment and stainless steel.

## Basic Cleaning

The stainless steel, crevice-free tank should provide years of service and is resistant to chloride containing solutions, but it is important to avoid high concentrations of halogens, particularly chloride.

Halogen deposits may show as rust which can be cleaned off with either 10 % nitric acid or Bar Keeper's Friend on a soft cloth.

Wear suitable personal protective equipment.

The bath should be emptied at the end of each day, and for interior surfaces:

Wash → Rinse → Dry

Ensure that the drain outlet is cleaned along with the rest of the tank, paying particular attention to flushing the outlet and tap thoroughly.

## Descaling

In hard water areas, limescale can build up and reduce the efficiency of the water bath. Cleaning at the end of each day can prevent this, but periodically it may be necessary to descale the bath.

Add 1 litre of vinegar to the normal capacity of water and heat for 1 hour to 50 °C.

## Exterior and Antibacterial Painted Surfaces

The water bath should be cleaned at regular intervals by wiping external surfaces with a cloth or sponge soaked in warm water with a mild detergent.

Do not use strong solvents or solutions containing chlorinated hydrocarbons, esters, ketones or abrasive cleaners as this may damage the built-in antibacterial properties.

The antibacterial paint finish inhibits the growth of bacteria. It has been tested by independent specialist houses using internationally recognised test methods and proven to be effective against a wide range of bacteria, including *E. coli* and *S. aureus* (MRSA).

We recognise that hygienic coatings are part of a controlled approach to a cleaner working environment. With the paint formulation is an active ingredient with proven antibacterial properties which is maintained throughout its life span. In a laboratory environment, this is one fewer source of contamination. Unlike detergents, the antibacterial paint finish does not offer an instantaneous action, but is intended for long term general protection against bacterial growth.

Moisture on the painted surface is necessary for the bacterium to absorb the agent and be affected by it. The coating is therefore less active in very dry conditions, although moisture in the atmosphere will maintain some activity. Areas where moisture is trapped are difficult to clean and allow bacteria to proliferate, but these areas are most active for the antibacterial coating, thus improving defence against bacterial growth.

## Decontamination of Equipment

Benchmark laboratory equipment can be decontaminated after spillage or contact with blood samples infected with HIV or hepatitis by using rapid disinfectants.

We recommend Virkon tablets for the safe and rapid disinfection of equipment. Please follow the user instructions carefully. Virkon solution requires only 10 minutes contact time to be effective. Care should be taken with stainless steel tanks and it important that Virkon solution is not left in contact with metal solutions for longer than is necessary.

We recommend Perasafe powder for the safe and rapid sterilisation of equipment. Please follow the user instructions carefully.

Please contact your distributor for further information relating to these products.



## Lids

The benefits of using a lid are:

- Prevents contamination from airborne particles
- Improved efficiency - reduced running costs
- Reduces evaporation of water at higher temperatures

Gabled lids maximise the bath working area and ensures all condensation is diverted back to the water bath, preventing contamination of open flasks or test tubes.

Bath	GRP Hinged Gable Lid	GRP Lift-Off Gable Lid	Stainless Steel Gable Lid
<b>TM5</b>	BA110544	BA150100	BA01882
<b>TM9</b>	BA110548	BA150102	BA01883
<b>TM13</b>	BA110552	BA150104	BA01884
<b>TM20</b>	BA110556	BA150106	BA01885



GRP Hinged Gable Lid



Stainless Steel Gable Lid

## Test Tube Racks

### Stainless Steel

	Holes	Hole Diameter
<b>BA01888</b>	26	17 mm
<b>BA01890</b>	16	26 mm
<b>BA01887</b>	36	13 mm
<b>BA01889</b>	18	19 mm <i>suitable for 1.5 mL microtubes</i>
<b>BA150125</b>	12	32 mm



Bath Size	5 L	9 L	13 L	20 L
<b>Max no. of racks</b>	1	2	4	6

### Churchill

Bath	Holes	Hole Diameter	
<b>TM5</b>	28	18 mm	BA150110
<b>TM9</b>	44	18 mm	BA150112
<b>TM13</b>	68	18 mm	BA150114
<b>TM5</b>	28	25 mm	BA150116
<b>TM9</b>	44	25 mm	BA150118
<b>TM13</b>	68	25 mm	BA150120



### Flat n Fold™ Stainless Steel Test Tube Racks

	Holes	Diameter
<b>BA140320</b>	26	17 mm
<b>BA140325</b>	16	26 mm
<b>BA140330</b>	36	13 mm
<b>BA140335</b>	18	19 mm
<b>BA140340</b>	14	32 mm

Bath Size	5 L	9 L	13 L	20 L
<b>Max racks</b>	1	2	4	6

### Polypropylene Spheres

BA150130 Pack of 200



## Warranty

Timstar warrants to the customer that the product purchased is free from defects in materials and workmanship.

Provided the terms of payment are duly complied with, Timstar undertakes to remedy any original defects arising from faulty materials or workmanship, in any good manufactured or supplied by Timstar, under proper and normal conditions of use, may develop within a period of three years from the date of delivery.

In the case of components which, by their nature of application, have an unpredictable lifespan, this guarantee shall only be to the extent of the guarantee given by the manufacturers of these articles.

Timstar will accept no liability, where in the opinion of the company, the defect has been caused by damage due to: the customer's failure to follow operating instructions; incorrect installation; wear and tear; use of spare parts other than those recommended by Timstar; alterations or repairs undertaken by a party other than one authorised by Timstar.

Any damage claim must be in writing, and give the serial number and description of the goods, order number and date of delivery, and detailed description of the problem. It will not apply where any names or serial numbers or other information which may be attached to or inscribed upon the goods have been removed, cover up or defaced in any way.

Any goods or parts thereof, which may require repair or replacement, shall be repaired or replaced at the discretion of Timstar at the works of Timstar. The product to be repaired shall be sent to Timstar at the customer's risk and expense. Any such goods or parts will be delivered by Timstar to the customer free of charge within the United Kingdom but if required to be borne by the customer. All faulty parts removed from the equipment become property of Timstar. Any other repairs or work by Timstar will be carried out under the terms and conditions for specialist engineers currently in force.

In the event of replacement with a new or reconditioned model, the replacement unit will continue the warranty period of the original equipment.

If any goods or parts thereof are returned unnecessarily, all costs involved, including a charge for inspection, handling and the return carriage must be paid by the sender. In no circumstances should any of the goods be returned to Timstar without its prior written consent.

Please retain the original packaging over the warranty period.

### Timstar Laboratory Suppliers Ltd

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## EC Declaration of Conformity

We herewith confirm the following product:

TM BENCHMARK DIGITAL WATER BATHS

Conforms to the requirements outlined by the following European Directives:

Low Voltage Directive **2006/95/EEC**

EMC Directive **2004/108/EC**

Conforms with the requirements of the following standards:

**BS EN 61010:1**

**BS EN 61010:2.010**

Safety requirements for electrical equipment for measurement, control and laboratory use

**BS EN 61326**

Electrical Equipment for measurement control and laboratory use – EMC requirements

