



VWR 12 and 18 liter linear shaking water bath

INSTRUCTION MANUAL



North American Catalogue Numbers

10128-126	12 Liter with US mains plug
10128-128	18 Liter with US mains plug

Version: 2
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Legal Address of Manufacturer

North America

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Country of origin

United Kingdom

Instruction manual

Introduction

The VWR shaking water baths are a general purpose series of thermostatically controlled shaking bath designed for indoor laboratory use by a professional user. Conforms to DIN 12876 Class 1 for use with non-flammable liquid.

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1. Safety

1.1 Warning symbols

The symbols below are marked on the equipment to indicate:



Caution: Surfaces and water can be hot during and after use.



Read this manual before using the bath

1.2 Safety certification

VWR water baths meet the requirements of international safety standard IEC 61010-2-10 and IEC 61010-2-51 and national standards based on them including:

UL 61010A-2-010

CAN/CSA-C22.2 NO. 61010-2-010-04;

UL 61010-2-051-04

CAN/CSA-C22.2 No. 61010-2-051



The equipment is ^c_{us} marked to show compliance with North American Safety Standards.

1.3 Safety features

The shaking trolley is driven by a magnetic drive system. The drive magnet in the tank is magnetically coupled to a motor-driven magnet under the tank. The magnetic coupling cannot exert enough force to cause injury.

In addition to the digital temperature control system, there is a separate fixed-temperature cut-out to protect the bath and surroundings in the very unlikely event of failure of the control system.

1.4 Before first operating the equipment

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

If the equipment has been transported or stored in cold or humid conditions, condensation may form inside it. If that could have happened, allow time (at least 2 hours) for the condensation to evaporate before using the equipment.

1.5 Precautions during and after operation

The bath is for use only with water as the bath liquid. Make sure that it cannot become contaminated by other liquids. The use of de-ionized water is recommended to prevent corrosion. See technical tips in Section 6 of this manual.

Change the water regularly and empty when not in use for prolonged periods, to further prevent corrosion and contamination.

Do not use the equipment in an area where there are aggressive or explosive chemical mixtures or atmosphere.

If potentially hazardous liquid is spilt onto the equipment, disconnect it from the power supply and have it checked by a qualified service technician. It is the user's responsibility to carry out appropriate decontamination if hazardous material is spilled on the equipment.

Do not use the bath to heat any material that could cause a fire or any other kind of hazard.

Take care when operating after a power interruption as shaking will restart at the previous speed.

Restricting or interfering with the tray motion in the bath may reduce performance and reduce reliability

There are accessible moving parts in the bath. Observe safe working practises when operating a shaking bath. Users should not interfere with moving parts when in use and prevent accidental contact from items such as fingers, hair or clothing.

2. Getting started

2.1 Unpacking

Remove packing materials carefully, and retain for future shipment or storage of the equipment. Standard equipment includes:

- Thermostatic shaking bath
- Mains cord with plug
- Drive magnet
- Shaking trolley
- Universal tray
- Gabled polycarbonate lid
- Instruction manual
- User guide

2.2 Optional accessories

	VWR North American Catalogue number
Test tube tray (can also be used as a plain tray)	
For 12 liter baths 10128-126, holds 3 test tube racks	10144-848
For 18 liter baths 10128-128, holds 5 test tube racks	10144-850
Replacement Universal tray - with springs	
For 12 liter baths 10128-126	10144-844
For 18 liter baths 10128-128	10144-846
Steel base tray	
For 12 liter bath	10144-840
For 18 liter bath	10144-842
Test tube racks	
Rack for 10mm tubes	10144-828
Rack for 13mm tubes	10144-830
Rack for 16mm tubes	10144-852
Rack for 19mm tubes	10144-854
Rack for 25mm tubes	10144-856
Rack for 30mm tubes	10144-858
Rack for 0.5mm microtubes	10144-836
Rack for 1.5mm microtubes	10144-838
Replacement non drip Polycarbonate Gabled Lids	
For 12 liter baths 10128-126	97025-626
For 18 liter baths 10128-128	97025-628

2.3 Electrical supply

Check that the supply voltage marked on the serial number plate, and the type of mains plug, are correct for your mains supply outlet (which must have a ground connector).

To disconnect the equipment from the mains supply, remove the mains plug from the mains supply outlet. Make sure that the mains plug is easily accessible.

2.4 Conditions of use

The water baths are for indoor laboratory use only. Check that the environmental conditions of the laboratory are within the following limits:

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	Up to 5,000m (16,400ft) above sea level

3. Operation

3.1 Water level

Ensure that the water level is at least 6cm above the bottom of the tank, and not higher than 2.5 cm from the top. This applies both without any vessels in the bath and with the maximum contents.

Accidental water spillage can occur when shaking is started. Reduce the water level as required.

Before emptying a bath, allow the water temperature to fall to a safe level. The 18 liter bath, should be emptied before moving.

3.2 Operation above 60°C

The supplied gabled lid must always be used above 60°C to optimize the temperature control; for the bath to operate efficiently and to ensure the set temperature is reached and maintained.

Without the lid, excessive evaporation will require the bath to be filled more often.

3.3 Use as a thermostatic bath without shaking

If the shaking trolley and drive magnet (see 3.4 below) are lifted out, a shaking bath can be used as a simple thermostatic bath. When used in this way, if flat bottomed vessels or objects are to be placed in the bath, always use a raised base tray (optional accessory) to avoid damage to the under-tank heater.

3.4 Allowing the bath to run dry

Always take care to avoid allowing the water to evaporate to the point that the bath runs dry. This can lead to the bath's internal safety cut-out operating requiring a suitable qualified technician to reset it.

The bath has a built-in advanced detection mechanism to greatly reduce the chances of the safety cut out occurring in most circumstances where the bath is left to accidentally run dry. This feature is only enabled automatically when the following criteria are met:

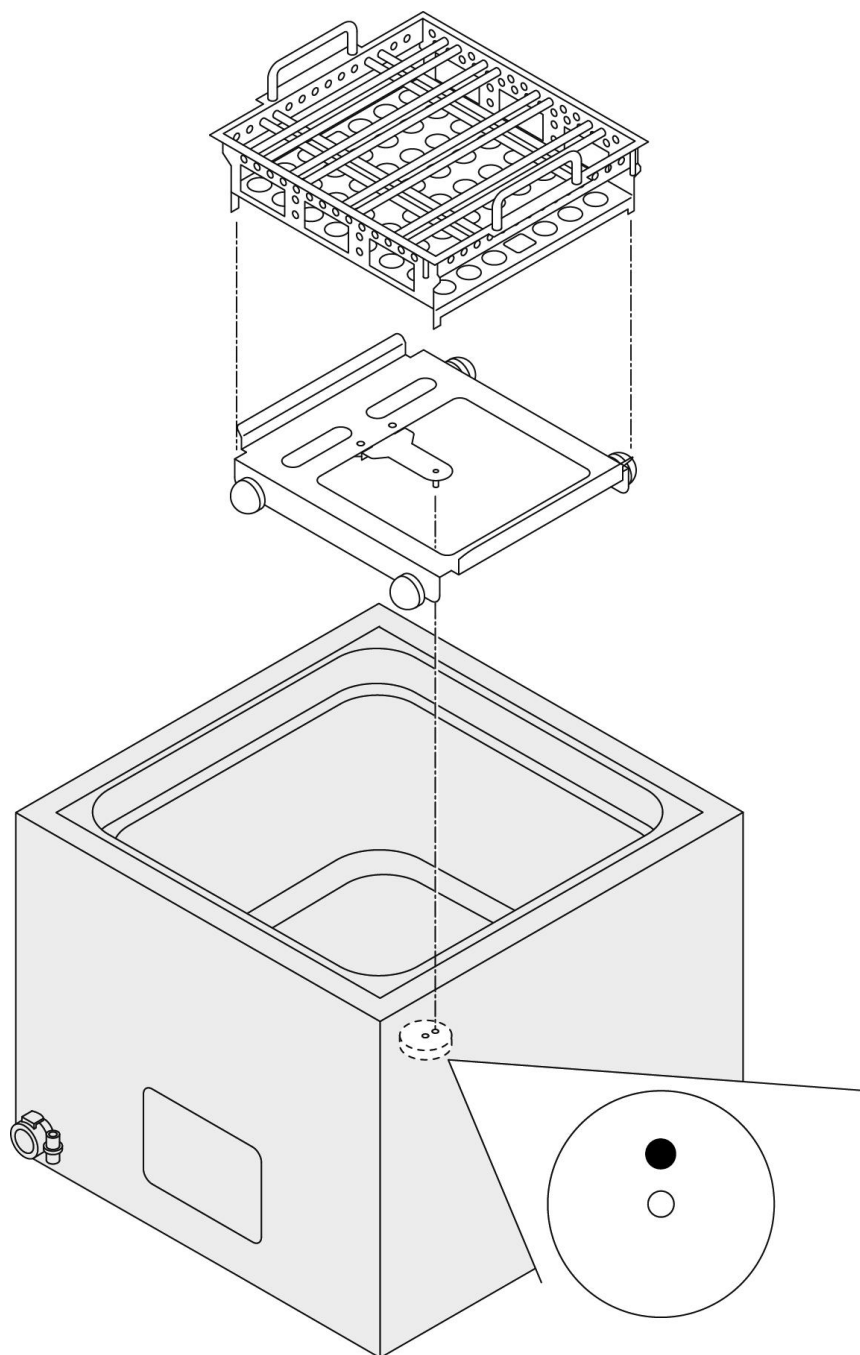
The set temperature is >50°C
The bath has been operating for a least one hour
The water is not set to boiling point ($\geq 99^{\circ}\text{C}$)

If the bath detects signs that the bath water level may be becoming low, it will alert the user by displaying *dry* and sounding an alarm

Once you have checked the water level and topped up the water level as necessary you will need to switch the bath off and on in order to resume operation.

For users with specialist applications where this feature maybe unnecessarily triggered, it can be disabled. Press the **set** key to enter the bath menu and use the arrow keys to select *dPA* (Dry Protection Alarm). Press the **set** key and use the arrow keys to select *OFF*. Use the **set** key to confirm that the dry start and run dry protection are switched off.

3.5 Fitting the shaking trolley and tray



Fit the trolley by locating the drive pin in the hole on the top of the drive block. The tray will then fit directly on top of the trolley.

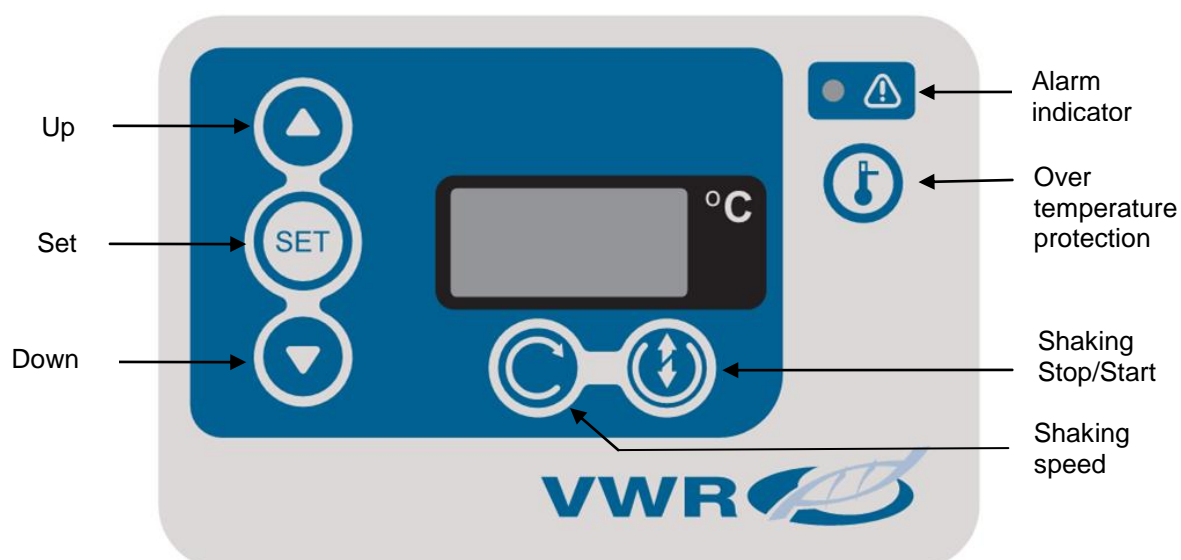
The tray can be removed to add or take away flasks and other vessels without removing the trolley.

3.6 Using the shaking bath

3.6.1 Bath controls

The bath power mains switch is located at the rear of the unit.

The front panel controls are shown below



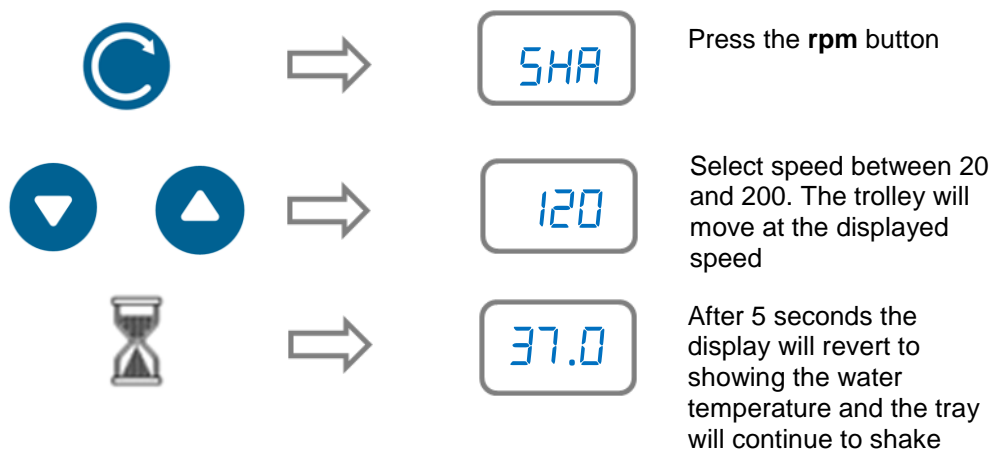
3.6.2 Setting the control temperature °C



Once the control temperature is entered the bath shows a scrolling bar display indicating the bath is heating. When the bath is within 1°C of the control temperature this will change to displaying the actual water temperature in the bath.

3.6.3 Setting the shaking speed SHA

To set the shaking speed:



The shaking speed can be checked at anytime by pressing the rpm button. The speed is displayed for 2 seconds.

The maximum speed for a particular application will depend on number and size of vessels, and the depth of the water. The shaking trolley is driven by a drive magnet under the tank, magnetically coupled to the trolley through the tank. As the speed is increased a point is reached where the magnetic coupling de-latches, causing the trolley either to move erratically or to stop. Reduce the speed to restore the magnetic coupling.

Take care when operating after a power interruption. Shaking will start at the previously set speed.

3.6.4 Stopping and starting the shaking



The shaking will start at the speed previously set using the **rpm** button. If no speed has been set then the display will show **OFF** when **start** is pressed.

3.6.5 Setting the over temperature protection OTA

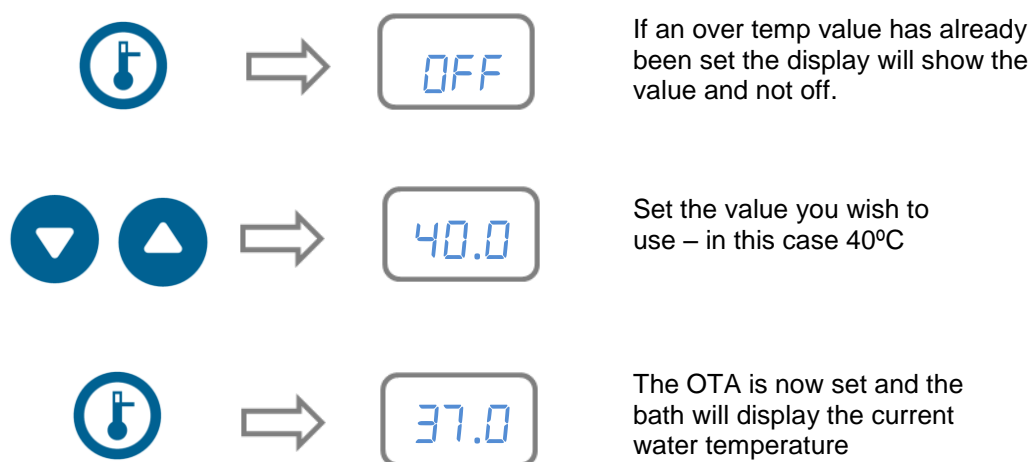
The over temperature protection can be used to protect samples by setting a maximum temperature limit the bath is allowed to heat to. If the bath exceeds this temperature, it will stop heating, display **OTA** (over temperature alarm) and sound an alarm.

The alarm can be silenced by pressing the **set** key.

You should set the over temperature value, allowing for a safety margin to the sample maximum temperature limit if possible. Additionally the **OTA** limit should be greater than the bath control temperature to avoid nuisance alarms. VWR recommends this is at least 1°C.

If the alarm triggers, allow the bath to cool down before switching the bath off and on to resume normal operation. Note that if the cause of overheating is an incorrect set point, this will need to be corrected otherwise the alarm will operate again.

To set the over temperature alarm:



3.6.6 Single point calibration SPC

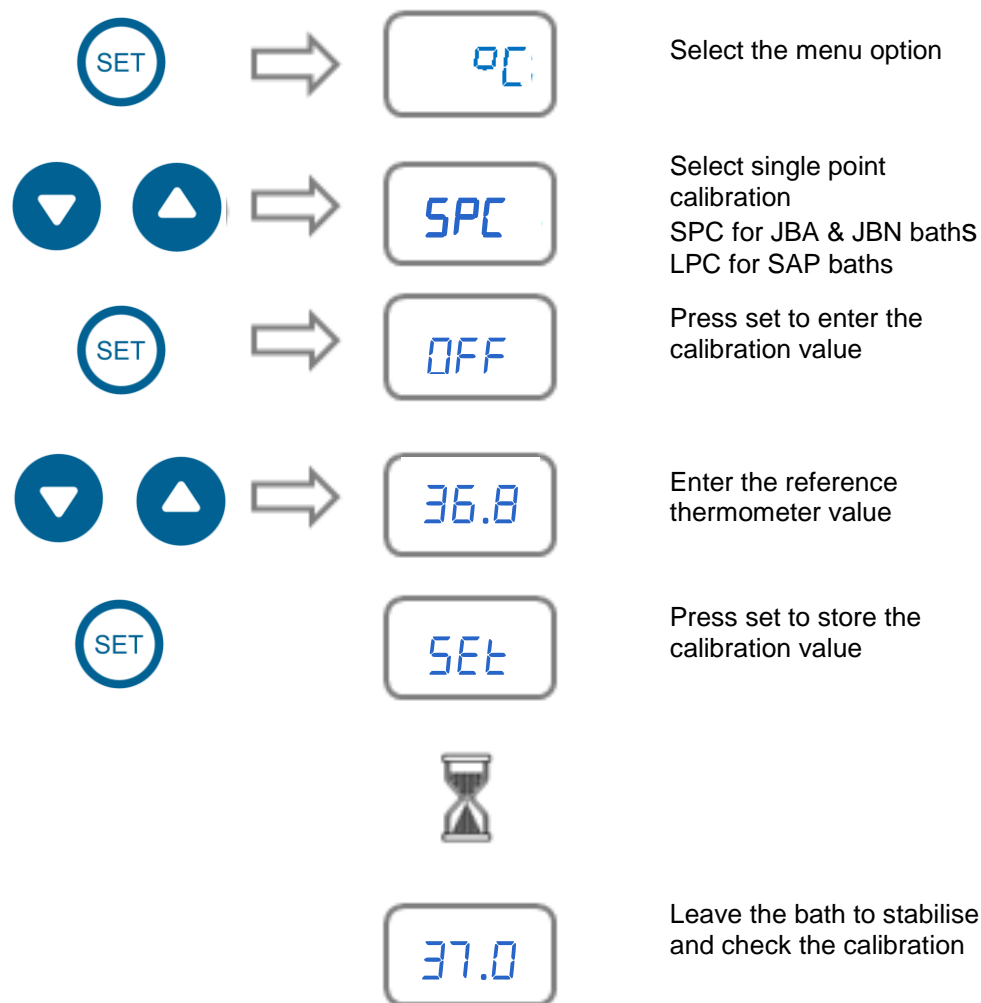
The displayed temperature is typically accurate to within 1°C of the actual temperature of the water in the bath. Greater accuracy can be achieved by calibrating the bath at the intended working temperature. The temperature offset applied when calibrated is then applied across the complete temperature range of the bath.

The quality of the calibration is highly dependent on:

- Use of a suitable reference thermometer, ideally 10 times the accuracy you are trying to achieve
- Performing a calibration in a stable ambient environment (+/-1°C) free from draughts or cooling air currents

To calibrate the shaking bath, firstly set the bath to the desired set point and leave to stabilise for at least an hour.

Place the reference thermometer either in the centre of the bath, or if using a lid, through the thermometer hole. Note the temperature shown by the reference thermometer and enter it into the calibration menu by following the steps below.



4 Specification

4.1 Physical and electrical details

Mains supply 110-120V @ 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

Models	Capacity/Liters	Weight/kg	Current Rating/Amps
10128-126	12L	9.2	5.8A
10128-128	18L	11.2	8.5A

4.2 Performance

Range	5°C above ambient to 99°C
Display (also used for setting)	10.0 to 99.0°C in steps of 0.1°C
Temperature stability to DIN 12876-3 *	$\pm 0.1^\circ\text{C}$
Shaking speed range	20 to 200 rpm
Storage and transportation temperature	-20°C to +60°C

The maximum shaking speed for a particular application will depend on the number and size of vessels in the shaking tray, and the depth of the water).

* The supplied polycarbonate lid must be used to achieve the quoted performance

5 Maintenance and service

No routine maintenance is required except for cleaning.

5.1 Cleaning

Clean the equipment with a damp cloth, using water only. Do not use chemical cleaning agents. Before using any other cleaning or decontamination method, check with the manufacturer or supplier to make sure that the proposed method will not damage the equipment.

Scale on immersed parts can be removed using chemical de-scaling products designed for use on kitchen equipment which has metal heating elements. De-scaling products may be toxic and manufacturer's instructions should always be followed.

5.2 Replacement of fuses

The fuses are internal and should not need to be replaced

5.3 Routine safety tests

If routine tests are to be made, we recommend a test of the integrity of the protective earth conductor and an insulation test at 500 Vd.c. Routine flash tests are not recommended for any electrical equipment, because repeated high voltage tests degrade insulation materials.

5.4 Replacing the mains cord

Any replacement mains cord-set used with the shaking water bath must meet the same specification as the one originally supplied with the bath to maintain safety of the bath and must be no more than 3 meters long.

12 liter baths: the cable must have the following markings; SVT, 3x 18AWG, VW-1, 75°C, 300V, FT2 and be rated to carry 10A. The mains plug, lead and IEC connector must carry 3rd party approval marks for Canada and the US (e.g. CSA and UL marks/file numbers).

18 litre units: the cable can only be replaced by VWR. Please contact your local VWR representative or visit www.vwr.com

5.5 Service

Visit the VWR's website at www.vwr.com for:

- Complete technical service contact information
- Access to VWR's Online Catalogue, and information about accessories and related products
- Additional product information and special offers

Contact us For information or technical assistance contact your local VWR representative or visit **www.vwr.com**.

6 Technical Tips

Which water should you use in your bath?

- Use tap water with care. Water with a high lime content will cause scale build up and should be avoided.
- Distilled water and some types de-ionised water may be used. Avoid ultra high purity de-ionised waters.
- Avoid using water with high levels of salts or iron. These will reduce the life of your bath
- Regular water changing and frequent cleaning of your bath is needed to preserve the bath's corrosion resistance
- Ensure your bath is stored dry.
- Use care in placing other metallic items in the bath. Some metals (e.g. ferrous materials such as iron filings and swarf) can cause an electro-chemical reaction leading to corrosion.
- The product warranty may be affected by the use of inappropriate or corrosive liquids

7. Troubleshooting

No lights or display

Check power source or mains switch

Display shows 'OFF' when shaking start button is pressed

Check that a shaking speed has been set by pressing the rpm button. Set the speed as required.

The display keeps showing 'OER'

The water temperature has exceeded the over temperature alarm set temperature. Check and adjust the over temperature alarm temperature as required.

Display shows 'dry'

The bath has been heating with no water or been allowed to boil dry. Check the water level, the set point temperature. Switch the bath off and on to clear the alarm.

Display shows 'OEL'

The bath has tripped the fixed over temperature cut-out, an internal circuit breaker. It will need to be checked by a qualified service technician. Contact your local VWR representative.

Display shows 'Prb'

Internal probe error. Contact your local VWR representative.

Display shows 'B.B.B.' flashing permanently.

System error. Contact your local VWR representative.

Display temperature is different from actual temperature

Use single point calibration (SPC) in section 3.5.4 to correct this.

There is no last digit on the display

Allow the bath to stabilize.

8. Warranty

VWR International warrants that this product will be free from defects in material and workmanship for a period of three (3) years from date of delivery. If a defect is present, VWR will, at its option and cost, repair, replace, or refund the purchase price of this product to the customer, provided it is returned during the warranty period. This warranty does not apply if the product has been damaged by accident, abuse, misuse, or misapplication, or from ordinary wear and tear. If the required maintenance and inspection services are not performed according to the manuals and any local regulations, such warranty turns invalid, except to the extent, the defect of the product is not due to such non-performance.

Items being returned must be insured by the customer against possible damage or loss. This warranty shall be limited to the aforementioned remedies. IT IS EXPRESSLY AGREED THAT THIS WARRANTY WILL BE IN LIEU OF ALL WARRANTIES OF FITNESS AND IN LIEU OF THE WARRANTY OF MERCHANTABILITY.

9. Disposal



This equipment is marked with the crossed out wheeled bin symbol to indicate that this equipment must not be disposed of with unsorted waste. Instead it's your responsibility to correctly dispose of your equipment at lifecycle -end by handling it over to an authorized facility for separate collection and recycling. It's also your responsibility to decontaminate the equipment in case of biological, chemical and/or radiological contamination, so as to protect from health hazards the persons involved in the disposal and recycling of the equipment. For more information about where you can drop off your waste of equipment, please contact your local dealer from whom you originally purchased this equipment.

By doing so, you will help to conserve natural and environmental resources and you will ensure that your equipment is recycled in a manner that protects human health.

Thank you

10. Compliance with local laws and regulations

The customer is responsible for applying for and obtaining the necessary regulatory approvals or other authorisations necessary to run or use the Product in its local environment. VWR will not be held liable for any related omission or for not obtaining the required approval or authorisation, unless any refusal is due to a defect of the product.

Notes



1.800.932.5000 | vwr.com

Prices and product details are current when published; subject to change without notice. | Certain products may be limited by federal, state, provincial, or local regulations. | VWR makes no claims or warranties concerning sustainable/green products. Any claims concerning sustainable/green products are the sole claims of the manufacturer and not those of VWR International, LLC. All prices are in US dollars unless otherwise noted. Offers valid in US and Canada, void where prohibited by law or company policy, while supplies last. | VWR, the VWR logo and variations on the foregoing are registered (®) or unregistered trademarks and service marks, of VWR International, LLC and its related companies. All other marks referenced are registered by their respective owner(s). | Visit vwr.com to view our privacy policy, trademark owners and additional disclaimers. ©2014 VWR International, LLC. All rights reserved.