



Oil Bath

BO500

Instruction Manual

First Edition

- Thank you for purchasing “Oil Bath” of Yamato Scientific Co., Ltd.
- Carefully read this Instruction Manual and the Warranty Card and be fully acquainted with their information to assure proper use of this product. Manual and Warranty Card thoroughly before use. Keep them in safe place close to this Equipment so that you can refer to them any time.

Warning: Please read the important warning notes in this Manual carefully and thoroughly, and get the good understanding of their contents before using this Equipment.

Yamato Scientific America, Inc.

Printed on recycled paper



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Explanation of symbols

About symbols

Various symbols are provided in this Instruction Manual and on the product to ensure safe operation. Improper handling of this Equipment without understanding their contents will lead to the results classified below. Be sure to fully understand the description of symbols below before proceeding to the text of this Manual.

 Warning	Indicates a situation which may result in death or serious injury (Note 1.)
 Caution	Indicates a situation which may result in minor injury (Note 2) and property damages (Note 3.)

- (Note 1) Serious injury means a wound, an electrical shock, a bone fracture or intoxication that may leave after effects or require hospitalization or outpatient visits for a long time
- (Note 2) Minor injury means a wound or an electrical shock that does not require hospitalization or outpatient visits for a long time.
- (Note 3) Property damage means damage to facilities, devices and buildings or other properties.

Meanings of symbols



This symbol indicates a matter urging user to follow the warning (“caution” included). Specific description of warning is indicated near this symbol.



This symbol indicates prohibitions. Specific prohibition is indicated near this symbol.



This symbol indicates matters that the user must perform. Specific instruction is indicated near this symbol.



Warnings

Never operate in an atmosphere where flammable or explosive gas is present.



- Never operate this Equipment in an atmosphere where flammable or explosive gas is present. This Equipment is not explosion-proof. Spark may be discharged by switching “ON” and “OFF” and also relay during operation, and then it may cause fire or explosion.

Must connect grounding wire properly.



- Be sure to connect the earth wire to prevent electric shock due to earth leakage. If the power supply system has no earth terminal, the grounding work (Type 3 grounding work, 100 Ω or less) is necessary. Since the grounding work must be done by the qualified electric worker, contact a shop from which you have purchased the product, Yamato Kagaku service shop, or the electrical workshop.
- Never connect grounding wire to gas line pipe or water line pipe due to fire or electric shock.
- Never connect grounding wire to telephone grounding line or to lightning conductor due to fire or electrical shock.

Always avoid an unstable place.



- Do not install the product on an inclined or any unstable place. Otherwise, the product may fall down, causing injury.

Turn the power off when an abnormality occurs.



- Turn immediately the power off of this Equipment and shut down the power supply, if smoke or strange smell is generated from it by any chance. Contact with local dealer or Yamato sales office and/or Yamato Customer service Center and ask them to inspect it. If nothing is done to it, fire or electrical shock may result. Never repair it by customer themselves to avoid any dangers.

When it begins to thunder



- When it begins to thunder, turn OFF power supply immediately. Otherwise, fire or electric shock may occur.



Warnings

Handle Power Cord/Power Cable carefully.



- Never operate this Equipment at bundled Power Cord/Power Cable. May heat its Cord/Cable and then cause fire, if operate at bundled it.



- Turn immediately off power source and also disconnect Power Plug/breaker of switch board of facilities, if it is damaged such as exposure of core wire or disconnection.

May cause fire or electrical shock, if this Equipment is operated with damaged Power Cord/Power Cable.

Ask local dealer to replace Power Cord/Power Cable.



- Do not modify, bend forcibly, twist or pull Power Cord/Power Cable. Otherwise, may cause fire and/or electrical shock.



- Do not damage Power Cord/Power Cable by setting under any desk and/or chairs, or by pinching it between objects. Otherwise, may cause fire and/or electrical shock.

Never disassemble the product.



- - Never disassemble the product. There are high-voltage parts (or rotating parts) inside the product, which may cause electric shock or injury. Be sure to ask a shop from which you have purchased the product or Yamato Kagaku service shop for internal inspection, adjustment, and repair.

- - Do not attempt modification of the product. Otherwise the fire or electric shock may occur.

Be careful about high temperatures.



- The product may be extremely hot and should be handled with thorough care. Careless handling may cause fire and burn.

Oils to be used



- Always use silicon oil. Oils with low flash point, such as rapeseed oil, etc., may catch fire, possibly causing fire.

Prohibition of no-oil heating



- Always avoid no-oil heating (heating in a no-oil state). Otherwise, the heater may develop abnormal heating, resulting in fire.



Warnings

Oil level



- Always use the product with the bath filled to 70% with oil. Decrease in the oil amount may possibly cause fire.

Do not touch any portions other than the operating parts.



- Do not touch directly with hand any portions other than the operating parts. The bath outside is also extremely hot and may cause burn. A burn protective sheet included in accessories is only for alleviation of the degree of burn if caused by touching, and not for complete prevention of burn.

Do not touch the heater



- Do not touch the heater directly with hand. Otherwise, high-temperatures may cause burn.

Do not lift the product with the burn protective sheet.



- Do not lift the bath by holding the attached burn protective sheet. Oil that may adhere to the sheet is extremely slippery, causing oil spillage and burn.

Handling of oil



- Do not splash oil to electric components. Otherwise, electric shock may occur due to failure or earth leakage of the electric system.



Cautions

Handling of the power cord



- Do not bring the power cord close to the heating apparatus, such as a stove, etc. Otherwise, the coating of cord may be melted, possibly causing fire or electric shock.

When the product is not to be used for a long time



- When the product is not to be used for a long time, be sure to turn OFF the power switch and the master power supply to ensure the safety.

Select a place with less humidity and dust.



- Do not install the product in a dust-laden humid place. Otherwise, fire and electric shock may occur.

After installation



- In case of unexpected earthquake or impact, the product may fall down, possibly causing injury. Be sure to take the fall-preventive measures to ensure the safety.

In case of maintenance



- In case of maintenance, be sure to turn OFF the power switch and the master power supply to ensure the safety.

Overheat prevention



- The product does not incorporate the device for prevention of overheat and no-oil heating. In order to ensure the safety, it is recommended to use the product in combination with the overheat preventive device TS200B or the mug mixer MB800 with the overheat preventive device. This will shut off the power supply to the oil bath in case of overheat.



Cautions

Mixing with the mug mixer



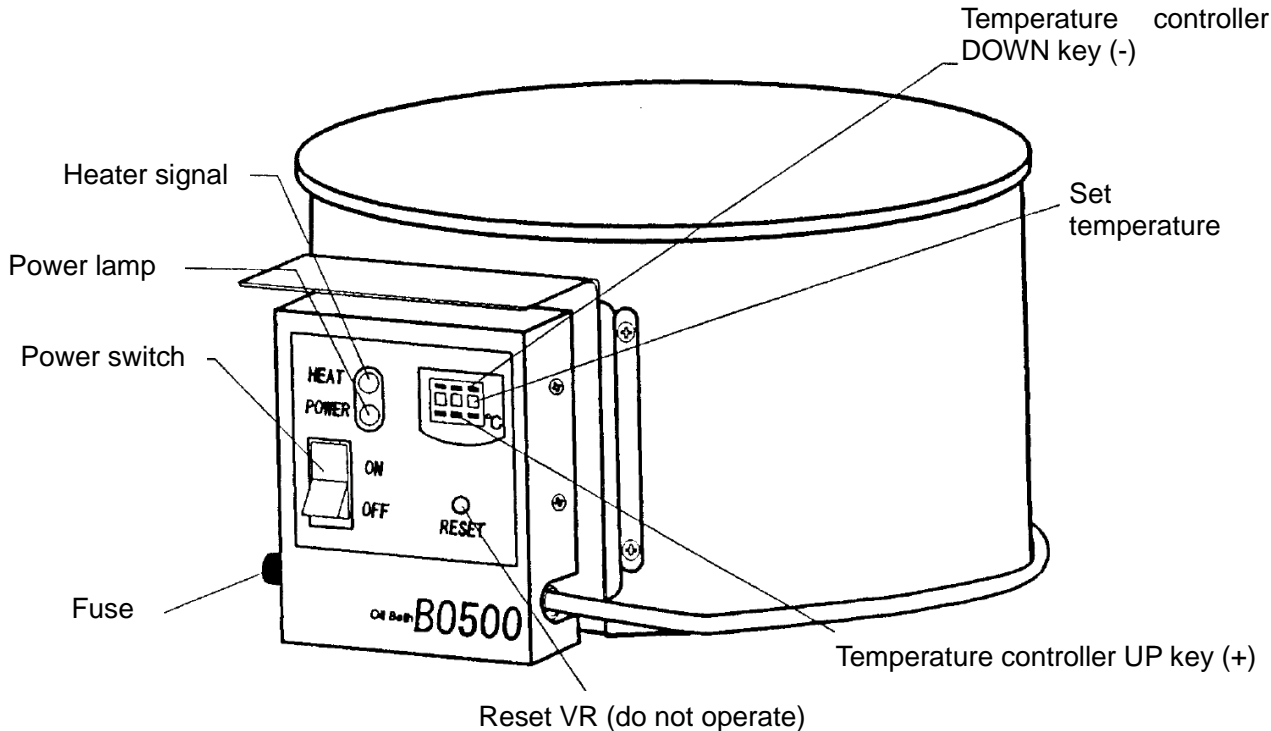
- If the stirring bar is in direct contact with the bath bottom during use while mixing with the mug mixer (our MB800, etc.), the bottom surface may form a hole. Place a stainless steel or glass plate on the bottom surface to prevent the stirring bar from contacting the bottom surface directly.

Reset VR

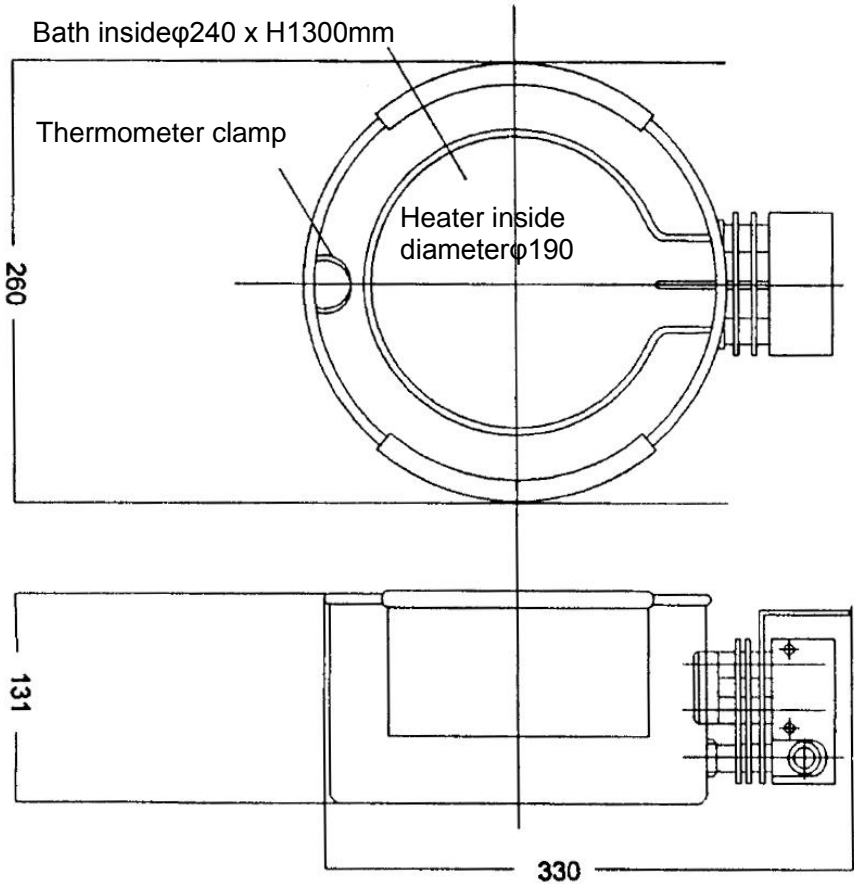


- Do not operate the reset VR (see the figure in the next page). This has already been adjusted before shipment, and the set temperature may deviate when this VR is operated.

External view and name of parts



* An example with the burn protective sheet attached



Operating procedure (see the figure in the previous page)

1. Install the burn preventive sheet included in the accessories.
2. Fill the bath with silicon oil. Fill to keep minimum 70% (equivalent to about 4.1 liter) of the bath volume.
3. When using the product placed on the mug mixer, be sure to place it in the middle of stirring table.

Note) This product does not incorporate the stirring system. The use of this product while mixing with the mug mixer ensures the uniform and stable temperatures inside the bath.

4. If necessary, insert your bar thermometer into the thermometer clamp.

Note) If the thermometer is to be used, it must be able to measure the temperatures up to 200 C,

5. Confirm that the power switch is OFF and insert the power cord.
6. Set the temperature controller to the temperature to be used.

Press the UP key (+) of temperature controller to increase the value and the DOWN key (-) to decrease the value. The controller can set the temperatures from 0 C (the switch indication "000") to 199 C (the switch indication "199"),

Note) The hundred's place can be set to 0 to 9. Note that setting the even numbers (2, 4, 6, and 8) is equivalent to setting of "0" while setting the odd numbers (1, 3, 5, 7, and 9) is equivalent to setting of "1."

Example: Numerical figure 690 – Setting 90 C

Numerical figure 950 – Setting 150 C

7. When the mug mixer is used, put in the stirring bar to ensure uniform oil temperatures.
8. Turn ON the power switch. The power lamp and the heater signal go ON and the heater signal starts flashing when the set temperature is reached.
9. After use, turn OFF the power switch, and disconnect and store the power cord.

Specifications

Name of product		Oil bath
Model		BO500
Operating temperature range		Room temperature +5°C to 199°C
Temperature control accuracy		±0.5°C
Inside bath		Stainless steel SUS304
Temperature controller		Time-sharing proportional control
Temperature sensor		Pt resistance temperature detector
Temperature setting		Digital
Heater		Pipe heater 700W
Standard	Effective dimensions (mm) Diameter x height	240φx130
	Outside dimensions (mm) Width x depth x height	250 x 290 x 130
	Bath internal volume(little)	Approx. 5.2
	Power supply(50/60Hz)	AC100V 8A
	Weight (kg)	Approx. 1.4
Accessories		Burn protective sheet (silicon rubber made) x 2 pieces

After sales service and warranty

Request to repair parts

Stop operation immediately, turn Earth Leakage Breaker (ELB) off, disconnect Power Cord or turn facilities breaker off for Power Cable, if any trouble occurs.

Contact with local dealer, Yamato sales office, or Yamato Customer Service Center.

(Require the following information for repair.)

- Model name of Yamato products
- Serial Number
- Date (year/month/date) of purchase(see to the warranty card or the nameplate of the unit)
- Description of trouble in detail as possible

Be sure to present the warranty card to Yamato service representative.

Warranty Card (attached separately)

- Keep Warranty Card with care.
Warranty Card would be given by local dealer or one of Yamato sales offices. Date of purchase of this Equipment and other information should be filled in Warranty Card. Then, keep warranty Card with good care.
- Repair this Equipment for free of charge according to the contents on Warranty Card. Warranty period is 1(one) year from date of purchase.
- Consult with local dealer, one of Yamato sales office or Yamato CSC for any repair after warranty ended. Charged repair service of this Equipment will be available on customer's request when it can be maintained functional by its repair.

Guarantee for maximum storage period of repair parts.

Guarantee that maximum storage period of repair parts will be 7(seven) years after end of their production, Oil bath BO500. Repair parts will be defined the parts to maintain this Equipment performance.

Troubleshooting

Symptom	Check
The display of operation panel does not go ON even when the power switch is turned ON.	<ul style="list-style-type: none"> ● Check if the power cord is firmly connected to the socket outlet or the distribution panel. ● Check for power failure.
Temperature changes during operation	<ul style="list-style-type: none"> ● Check if the environment temperature varies substantially.