HUMAN Lab ®

Operation Manual

May, 2007 revised

Covering Model

SHWB-30/45

Shaking Water Bath

Before operating this unit, Please read & understand this manual completely and Keep it for future reference.

HumanLab Instrument Co.

Shaking Water Bath

Safety warnings

Before operating, read and understand safety warnings thoroughly
And use this equipment properly.
Keep these warnings in mind for your safety.

Safety warnings : Danger!,Waring!,Cautions!

Danger : Failure to observe this instruction can result in a
personal injury or death.

Warning : Failure to observe this instruction may cause a fatal
injury

Caution : Violation of this instruction and improper use may
cause a serious injury and property damage.

	Warning
High Voltage	A risk of electric High Voltage exists. Make sure to install a ground wire.

	Danger
Expolsion	Explosion or fire may occur due to improper handling. Don't put flammable, explosive materials in chamber.

	Caution
Electric Shock	A risk of electric shock exists. Make sure to install a ground wire. Electric shock may occur without a ground wire installation

Shaking Water Bath

Features

This Economical digital shaking water bath has following features ;

1) Adjustable temperature and speed give you value and versatility.

2) Stabile reciprocation action, and low noise

3) Easy set the temperature and revolution, and high accuracy of the temp.
   control by digital PID controller.

4) Seamless corrosion resistant stainless steel chamber with removable
   tray are easy to maintain.

5) This shaking water bath holds a variety of flasks, test tubes for spring rack.

5) Built-in the drain cock for drainage of bath

Installation

⚠️

Attention

Do not put on the top of machine heavy materials.

Keep the insulation of electric wire & cable.

1) Install the equipment on a firm area avoiding heat, humidity,
   dust and vibration.

2) Place it in a well ventilated area with enough space.

3) Install it horizontally on a firm and stable surface.

4) The door can open to an angle of 180 degree,
   please consider enough space.

Shaking Water Bath

Safety Warning

⚠️
Danger
- Do not put flammable, explosive materials in the chamber.
- Explosion or fire may occur due to improper handling

⚠️
• Attention
- Keep away the flammable materials.
- Do not touch the electric cable by wet hands.
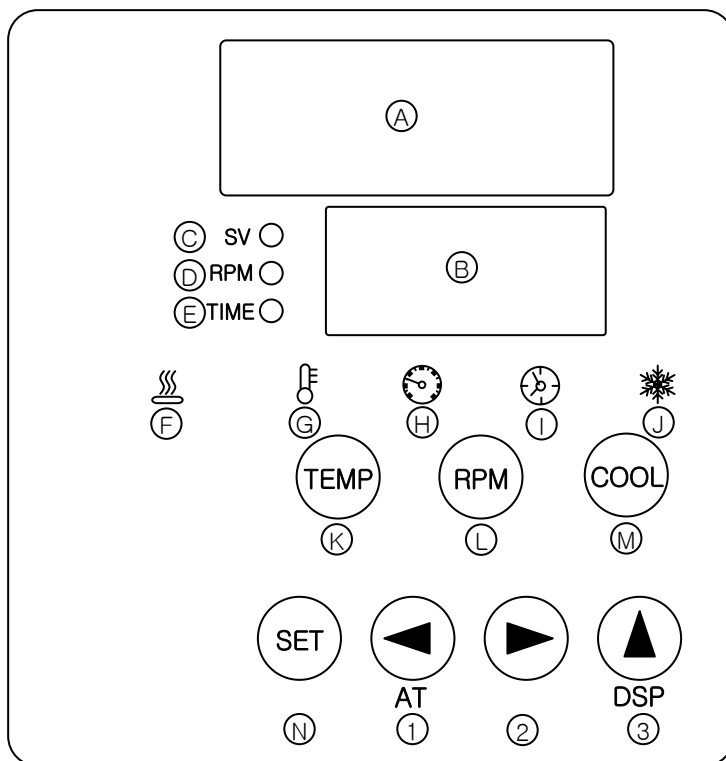- Make sure to wire the ground connection.

⚠️
Attention
- Make sure to supply the electric power of 240V,50 Hz.
- Keep away from the instruments use much electric power,

  it may cause the malfunction of this machine
- Do not use benzene, soap, detergent and hot water while cleaning.

  it causes the damage of parts and malfunction of instruments.
- Keep cleaning by the water when use the neutral detergent.
- Full out the electric plug when this machine do not operate for a long days.
- Keep the insulation of all electric wire and cable.
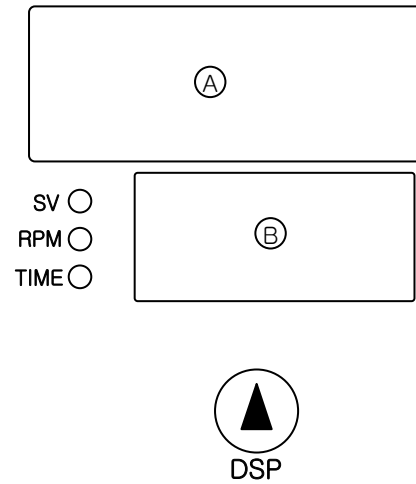
Operation

Name and Function

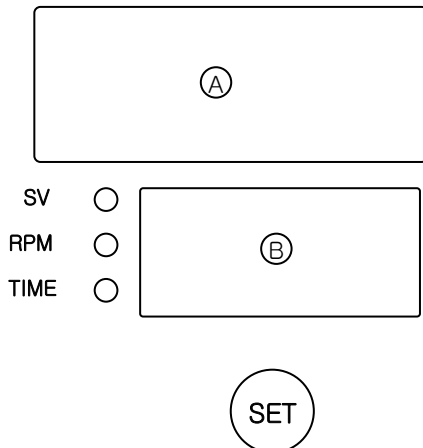|			
Ⓐ	Current Temperature	Ⓙ	LED of Cooler On/Off
Ⓑ	Set Temp, Current Speed, Time	Ⓚ	On/Off Switch of Temp. Control
Ⓒ	LED of Set Temperature	Ⓛ	On/Off Switch of RPM Control
Ⓓ	LED of Current Speed	Ⓜ	On/Off Switch of Cooler
Ⓔ	LED of Time	Ⓝ	Select Switch of Data Change
Ⓕ	LED of Heater power	①	Auto tuning & Left
Ⓖ	LED of Temp.control	②	Right
Ⓗ	LED of PRM control	③	Add the Value & Display
Ⓘ	LED of Actual Time		

Initial Mode

When the electric power supply, it displays
the temperature of chamber on Ⓐ
And Ⓑ indicates " set temperature", or
"RPM", or "Time".
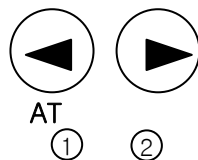Ⓑ display each value whenever push
the "DSP" button.

Ⓐ

SV ○
RPM ○
TIME ○

Ⓑ

▲
DSP

Set Value

Ⓐ

SV ○
RPM ○
TIME ○

Ⓑ

SET

Ⓐ is the input mode of "TEMPERATURE"
to push the "SET" button one time while
"SV" lamp is blinking on the right of Ⓑ.
Ⓐ is the input mode of "RPM"
to push the "SET" button two times while
"RPM" lamp is blinking on the right of Ⓑ
Ⓐ is the input mode of "TIME"
to push the "SET" button three time while
"TIME" lamp is blinking on right of Ⓑ .

◀ ▶
AT
① ②

It can move to each digit to input the value
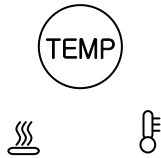to push ① toward right, or ② toward left.
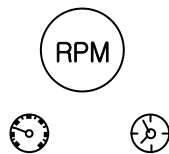
▲
DSP
③

The value input to push "DSP" button ③.

Operation

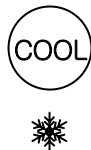| Start |
|-------|

TEMP

♨   🌡

Push the "TEMP" button, and the lamp is on the light.
♨ is on the light while the heater is power on.

RPM

⏲   ⏲

Push the "PRM" button, then the motor starts to run
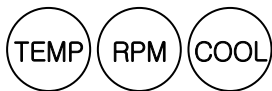and the lamp of RPM is on the light.

At the same time, the timer acts on while the lamp is
on the light

The motor is running continuously in case,

the timer is 00 : 00

COOL

❄

Push the "COOL" button, and the cooler acts on
while the lamp of cooler is on the light.

End

TEMP   RPM   COOL

Push the each button one more time,
then it will stop each function.

(▶)

AT

This auto tuning function measure and set automatically the value to fit for P.I.D. and ARW (Anti Rest Wind-Up).

This function can acts at any time while heating up and/or stabile running.

The auto tuning starts to push the "AT" button 5 seconds later while the buzzer sounds alike "bee---".

If it will stop this function, then push the "AT" button while 5 seconds.

Then, the lamp of AT is out of light, and release this function.

This auto tuning function is pre-set, and no need set process.

In case, this function is not stabile, please try to do it.

NOTICE

* The "AT" function acts while the temp. mode to push the button 5 sec. later.

* The "DSP" function uses the selection of TEMP/RPM/TIME without "INPUT MODE".

Shaking Water Bath

Maintenance

Warning   Power off before cleaning the machine.

Attention   Disconnect the electric plug.

Do not use benzene, soap, detergent and hot water
while cleaning. It causes the damage of parts and
malfunction of instruments

1) Cleaning the interior
 -. Disconnect the electric plug.
 -. Remove the selves and self hangers.
 -. Clean the dirty by brush or cleaner.
2) Cleaning the exterior
 -. Wipe the rug or sponge wetted by neutral detergent,
 -. Polish by dried woven fabric.
 -. Do not use organic solvent.
3) Cleaning the electric components
 -. Use the dried woven fabric.
4) Stand by for a long time
 -. Disconnect the electric power source.
 -. Wipe the exterior and interior of machine
 -. Warp the machine and store it.

Shaking Water Bath

Trouble Shooting & Repair

⚠️

- **Warning**   Switch off the main power when repair the machine.
- Do not disassembly, repair and transform of the machine except service engineers.

Trouble	Remedy
Do not start the machine	-. Check the power cable to connect or not. -. Make sure the power switch "ON"
Low capacity of heater	-. Check the condition of heater is good or not.
Low temperature	-. Check the set temperature. -. Check the set value of over temp protection. - .Check the heater is "ON".
Malfunction of Controller	-. Keep away from the machine the instrument use large capacity of electric power.

After Service

1) We guarantee 24 months in conditions of normal operation.

   However, the machine or component were occurred the trouble,

   then please let us know the details of as under;

-. Detailed description of trouble and parts

-. Machine Model.

-. Manufacture or Purchase date.

2) We cannot guarantee the trouble occurred by as under;

-. Mis-operation, unreasonable repairing and transform of machine by user.

-. Transfer and handle roughly of the machine.

-. Natural disaster and over current , voltage and frequency.

-. Trouble occurred by mistake of operation.

3) Please let us know any furthers of this machine.

Shaking Water Bath

Technical data

Temp	Range	Amb. to 100℃	
	Controller	Digital PID controller	
	Sensor	PT-100 Ohm	
	Accuracy	±0.5℃	
Timer	Controller	Digital display	
	Range	99hr 59min	
Material	Bath	Stainless steel	
	Out	Steel plate with powder coating	
	Heater	Stainless steel	
Working Range		180stroke/min	
Spring Rack		Stainless steel	
Stroke Length		30mm	
Safety		Over current glass fuse	
Motor		DC Motor 25W	
Power		AC 240V, 50Hz,1 ¢	

Specification

Model	SHWB-30	SHWB-45
Capacity	30Liter	45Liter
In Size (W×D×H)mm	500×300×200	600×300×250
Out Size (W×D×H)mm	670×340×250	770×340×300
Heater Capacity	1,500W	2,000W

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