Instruction Manual

Incubating/Cooling Shaker, ISICMBCDG

Revision 4
20/06/17

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SERVICE INFORMATION

If the troubleshooting section does not resolve or describe your problem, contact your authorized OHAUS service agent. For service assistance or technical support in the United States call toll-free 1-800-672-7722 ext. 7852 between 8:00 AM and 5:00 PM EST. An OHAUS product service specialist will be available to provide assistance. Outside the USA, please visit our web site, www.ohaus.com to locate the Ohaus office nearest you.

Serial Number: _____

Date of Purchase: _____

Supplier: _____

INSTALLATION

Upon receiving the Ohaus Incubating/Cooling Shaker, check to ensure that no damage has occurred during shipment. It is important that any damage that occurred in transport is detected at the time of unpacking. If you do find such damage the carrier must be notified immediately.

After unpacking, place the Incubating/Cooling Shaker on a level bench or table, away from explosive vapors. Secure to an immovable work surface by pressing down on the four (4) corners of the unit, creating a strong suction to the work surface (**DO NOT** place on a bench mat). Ensure that the surface on which the unit is placed will withstand typical heat produced by the unit. Always place the unit on a sturdy work surface.

The Incubating/Cooling Shaker is supplied with a power cord that is inserted into the IEC connector on the back of the unit first, then it can be plugged into a properly grounded outlet. The 120V unit plugs into a 120 volt, 50/60 Hz source. The 230V unit plugs into a 230 volt, 50/60 Hz source.

MAINTENANCE & SERVICING

The Incubating/Cooling Shaker is built for long, trouble-free, dependable service. No lubrication or other technical user maintenance is required. However at least every three (3) months you should:

- Unplug the unit.
- Remove any accumulated dirt from the base and tray.
- Check all accessible items to make sure they are properly tightened.

The unit should be given the care normally required for any electrical appliance. Avoid wetting or unnecessary exposure to fumes. Spills should be removed promptly. **DO NOT** use a cleaning agent or solvent on the front panel or lid which is abrasive or harmful to plastics, nor one which is flammable. Always ensure the power is disconnected from the unit prior to any cleaning. If the unit ever requires service, contact your Ohaus representative.

ENVIRONMENTAL CONDITIONS

Operating Conditions: Indoor use only.

Temperature:	5 to 40°C (41 to 104°F)
Humidity:	maximum 80% relative humidity, non-condensing
Altitude:	0 to 6,562 ft (2000 M) above sea level

Non-Operating Storage:

Temperature:	-20 to 65°C (-4 to 149°F)
Humidity:	maximum 80% relative humidity, non-condensing

Installation Category II and Pollution Degree 2 in accordance with IEC 664.

EQUIPMENT DISPOSAL

This equipment must not be disposed of with unsorted waste. It is your responsibility to correctly dispose of the equipment at life-cycle-end by handing it over to an authorized facility for separate collection and recycling. It is also your responsibility to decontaminate the equipment in case of biological, chemical and/or radiological contamination, so as to protect the persons involved in the disposal and recycling of the equipment from health hazards.

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.

SAFETY INSTRUCTIONS

Please read the entire instruction manual before operating the Incubating/Cooling Mini Shaker.

WARNING! DO NOT use the Ohaus Incubating/Cooling Mini Shaker in a hazardous atmosphere or with hazardous materials for which the unit was not designed. Also, the user should be aware that the protection provided by the equipment may be impaired if used with accessories not provided or recommended by the manufacturer, or used in a manner not specified by the manufacturer.

Always operate unit on a level surface for best performance and maximum safety.

DO NOT lift unit by the tray or lid.

CAUTION! To avoid electrical shock, completely cut off power to the unit by disconnecting the power cord from the unit or unplug from the wall outlet. Disconnect unit from the power supply prior to maintenance and servicing.

Spills should be removed promptly. **DO NOT** immerse the unit for cleaning.

DO NOT operate the unit if it shows signs of electrical or mechanical damage.

CAUTION! The caution hot indicator light warns that the temperature of the top plate is above 40°C. The light will illuminate and remain lit when the temperature of the top plate reaches approximately 40°C. When the heat is turned off, the caution hot indicator light will stay lit until the temperature of the top plate is less than 40°C.

Earth Ground - Protective Conductor Terminal

Alternating Current

Pinch Point - Keep fingers clear during operation.

STANDARDS & REGULATIONS

Compliance to the following standards and regulations is indicated by the corresponding mark on the product.

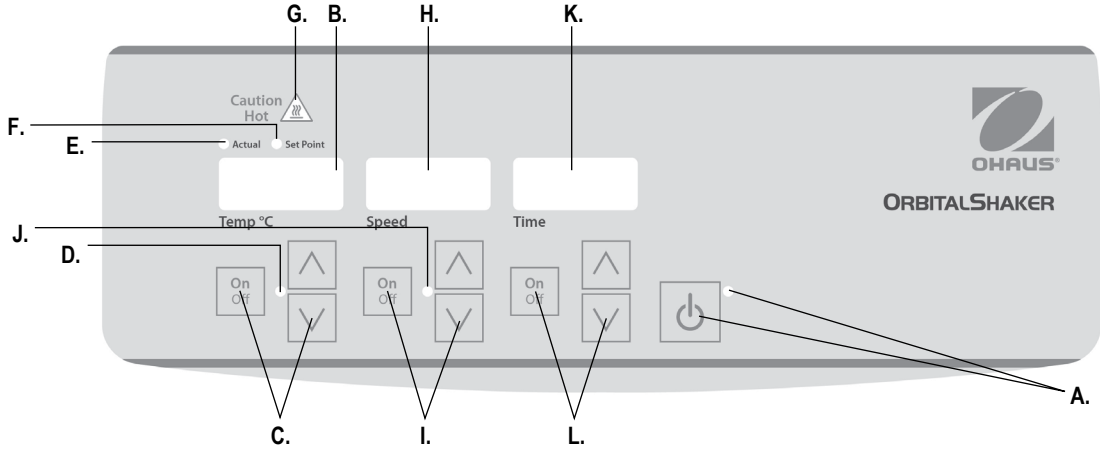
Mark	Standards and Regulations
CE	OHAUS Corporation declares that the ISIC series shakers comply with directives 2011/63/EU, 2014/30/EU, 2014/35/EU and standards EN 50581, EN 61010-1, EN 61010-2-010, EN 61010-2-051, EN 61326-1. The full text of the EU declaration of conformity is available at the following internet address: www.ohaus.com/ce.
	This product complies with directive 2012/19/EU. Please dispose of this product in accordance with local regulations at the collecting point specified for electrical and electronic equipment. For disposal instructions in Europe, refer to www.ohaus.com/weee.
	EN 61326-1
TÜV SÜD c US	CAN/CSA C22.2 61010-1, CAN/CSA C22.2 61010-2-010, CAN/CSA C22.2 61010-2-051 UL 61010-1, UL 61010-2-010, UL 61010-2-051

Global Notice
Warning: This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

Canada Notice
This Class A digital apparatus complies with Canadian ICES-003.

FCC Notice
NOTE: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Changes or modifications not expressly approved by Ohaus Corporation could void the user's authority to operate the equipment.



CONTROL PANEL

The front panel of the Incubating/Cooling Mini Shaker contains all the controls and displays needed to operate the unit.

A. Standby button/standby indicator light: The standby indicator light will illuminate when the unit is plugged in. The unit will be in standby mode. Press the standby button to activate the temperature, speed and time functions. The standby indicator light will shut off and the temperature, speed and time displays will illuminate. Press the standby button again and the unit will once again be in standby mode.

B. Temperature display: Displays the actual/set-point temperatures in conjunction with the actual/set-point indicator lights. **C.** Up/down arrows for set-point control. On/off button starts/stops the heating/cooling function. **D.** The temperature indicator light will be illuminated when the unit is heating/cooling.

E. Actual indicator light: Illuminates when the temperature displayed is the actual temperature of the air in the chamber.

F. Set-point indicator light: Illuminates when the set-point temperature is displayed.

G. Caution hot indicator light: Illuminates when the air temperature of the chamber is above 40°C (104°F).

H. Speed display: Displays the speed of the shaker. **I.** Up/down arrows for set-point control. On/off button starts/stops shaking function. **J.** The speed indicator light will be illuminated when the unit is shaking.

K. Time display: Displays accumulated time (continuous mode) or how much time is remaining (timed mode). The display range is from 0 to 9,999 minutes in one (1) second increments. The display will indicate minutes and seconds until the timer reaches 99 minutes and 59 seconds (99:59), then the display will automatically display minutes up to 9,999. **L.** Up/down arrows for set-point control. On/off button starts/stops the time function.

SPECIFICATIONS

Overall dimensions (L x W x H):	16.5 x 10.1 x 11.0” (41.9 x 25.7 x 27.9cm)
Electrical (50/60 Hz):	120 volts, 2 amps, 160 watts 230 volts, 1 amp, 160 watts
Fuses:	5mm x 20mm, 5 amp quick acting
Temperature range:	10°C below ambient to 65°C, when operating conditions are 15º to 40ºC
Temperature uniformity:	±0.5°C at 37°C
Speed range using microplates:	100 to 1200rpm
Speed range using modular blocks:	100 to 600rpm
Speed accuracy:	±2%
Timer:	1 second to 9999 minutes (increased in 1 second increments)
Orbit:	0.125” (3mm)
Capacity:	2 microplates or 2 modular blocks
Controls:	see page 4
Ship weight:	30.3lbs (13.75kg)

OPERATING INSTRUCTIONS

The Incubating/Cooling Mini Shaker has been designed for the temperature, speed and time functions to work independently of one another. The temperature and speed can be reset without resetting the timer and the timer can be stopped and started without interrupting the heating/cooling and shaking functions.

1. **Getting ready:**
   a. Plug the power cord into a properly grounded outlet. The standby indicator light will illuminate, and a single audible beep will sound, verifying power to the unit.
   b. Press the standby button to move the unit from standby mode. The standby indicator light will turn off and the temperature, speed and time displays will illuminate, displaying the previously used settings.
2. **Setting temperature:**
   a. Press the up/down arrows below the temperature display until you reach the desired temperature. When you release the button, the display will blink off and then on indicating the new set temperature has been accepted. The lights above to the temperature display will alternate between the actual and set-point temperature, showing both values, until five (5) audible beeps sound indicating set-point temperature has been reached.
   b. Press the on/off button to start the heating/cooling function. The indicator light below the temperature display will illuminate to indicate the heating/cooling function is in use and remain lit until heating/cooling has ceased.
   c. Temperature adjustments can be made without interrupting heating or cooling by using the up/down arrows below the temperature display. After the change has been made and you release the button, the display will blink off and then on indicating the new set temperature has been accepted.
   d. To stop the heating or cooling function, press the on/off button below the temperature display. The temperature indicator light will turn off.

CAUTION HOT indicator:

The caution hot indicator light warns that the temperature of the air in the chamber is above 40°C (104°F). The light will illuminate and remain lit when the temperature of the air in the chamber reaches approximately 40°C (104°F). When the heat is turned off, the caution hot indicator light will stay lit until the temperature of the air in the chamber is less than 40°C (104°F).

NOTE: Microplates will heat and cool faster than the modular blocks. Displayed temperature may not be the actual temperature of the modular blocks. This may be adjusted by performing a 'Single Point Calibration' (see page 8) with the modular blocks in place.

3. **Setting speed:**
   a. Press the up/down arrows below the speed display until you reach the desired speed. When you release the button, the display will blink off and then on indicating the new set speed has been accepted.
   b. Press the on/off button to start the shaking function. The indicator light below the speed display will illuminate and blink until the set-point is reached. Once the set-point is reached the light will stop blinking and remain lit until shaking has ceased. The micro-processor controlled ramping feature slowly increases speed until the set-point is reached which helps to avoid splashing, and provides excellent low end control.
   c. Speed adjustments can be made without interrupting shaking by using the up/down arrows below the speed display. After the change has been made and you release the button, the display will blink off and then on indicating the new set speed has been accepted.
   d. To stop the shaking function, press the on/off button below the speed display. The speed indicator light will turn off.

OPERATING INSTRUCTIONS CONT'D

NOTE: While the unit is capable of reaching 1200rpm, it is recommended that when using the modular blocks you do not go beyond 600rpm.

4. **Setting time to zero (0:00) and continuous mode:** Accumulated time.
   a. Press and hold the on/off button below the time display. After three (3) seconds the display will indicate the previous set time.
   b. Simultaneously press both the up and the down arrows, the display will indicate zero (0:00). The unit time is now set to zero (0:00) minutes. Alternately, you can use the up/down arrows to get to zero (0:00).
   c. Press the on/off button below the time display. The display will indicate the accumulated time. The up/down arrows will become inactive. To stop timer, press the on/off button again. **IMPORTANT:** This will **NOT** interrupt the shaking function. Press the on/off button below the speed display to interrupt the shaking function.
   d. To reset, press and hold the on/off button below the time display. After three (3) seconds the display will indicate the previous set time, which was zero (0:00).
5. **Setting timed mode:** Programmed time.
   a. Press the up/down arrows below the time display until you reach the desired time.
   b. Start this funtion by pressing the on/off button below the time display. The unit will run for the selected time, the up/down arrows will become inactive while the timer is running. The unit will stop shaking when time display reachers zero (0:00). Four (4) audible beeps will indicate the count down funstion is complete. The time display will default back to the set time. To repeat for the same time, simply press the on/off button again.
   c. To interrupt an automatic timing cycle before it is completed, press the on/off button below the time display. The display will flash off and on to indicate the time function is on "hold". **IMPORTANT:** This will **NOT** interrupt the shaking function. Press the on/off button below the speed display to interrupt the shaking function. Restart the timer by pressing the on/off button below the time display. Unit will continue counting down to zero (0:00). When the display reaches zero (0:00), you will hear the four (4) audiblebeeps that indicate the count down function is complete and the shaking function will cease.
6. **Turning unit off:**
   a. To turn the unit off, press the standby button. The temperature, speed and time displays will be blank, the standby indicator light will illuminate. The Incubating/ Cooling Mini Shaker should be kept in standby mode when not in use. To completely cut off power to the unit, disconnect the power cord from the unit or unplug from the wall outlet.

OPERATING TIPS

If using modular blocks, it is recommended to secure blocks onto the unit before loading the samples.

As a safety feature, a built-in program will shut power off to the motor if the tray is prevented from rotating, or the unit is overloaded beyond its recommended weight capacity.

The shaker will automatically restart after a power interruption. Built-in memory maintains the last used temperature, speed and time settings during a power interruption.

BEEPER PREFERENCE (muting audible alarm)

To silence beeper operation (except for error codes), with the unit in standby mode, press and hold the time on/off button and press the standby button. Release the standby button first, and then release the on/off button. To restore normal beeper operation, remove AC power to unit for ten (10) seconds and then restore.

OPERATING INSTRUCTIONS CONT'D

SINGLE POINT CALIBRATION PROCEDURE

This procedure is used to fine tune and calibrate the Incubating/Cooling Mini Shaker at a specific temperature setting. This process may be repeated for up to three (3) separate set-points. If a fourth calibration set-point is entered, the first set-point entered will be overwritten.

1. Turn unit on.
2. Set desired temperature.
3. Stabilize one (1) hour or more, measuring the temperature with a calibrated temperature probe/thermometer.
4. Press and hold standby button, then press the temperature up arrow once. The unit will beep two (2) times, confirming calibration mode. The display will now be flashing.
5. Press the temperature up/down arrows until the display matches the temperature probe/thermometer.
6. Press standby button to exit calibration mode and return to normal heating/cooling.

This process may be repeated at the same set-point, multiple times for fine tuning if desired.

The unit will now use the biased offset for that specific temperature setting and increase or decrease temperature accordingly to bring the temperature to set temperature. The decimal point of the display will flash to indicate a biased offset is being used. All other temperature settings will use the standard internal calibration. This offset will be stored in memory and retained until reset.

To restore unit to factory setting:

Press and hold the standby button while pressing the temperature down arrow once. The reset will be confirmed with two (2) audible beeps. Press the standby button to exit calibration mode and return to normal heating/cooling.

TROUBLESHOOTING

During operation, any rattling or ticking sounds may indicate a loose screw on the platform tray, tray attachment or accessory. All accessories should be sufficiently tightened in place before starting the unit.

Error	Cause of Error	How to Fix
E01	RTD open or temperature over 100°C (212°F)	This error should **NOT** be addressed by the end user. Switch the unit off and contact your Ohaus representative for repairs.
E02	RTD shorted or temperature below 0°C (32°F)	This error should **NOT** be addressed by the end user. Switch the unit off and contact your Ohaus representative for repairs.
E03	ceased bearing drive belt broken mechanical obstruction loose foot (suction cup)*	Press the standby button to clear this error and remove the mechanical obstruction. If the E03 error persists the reason may be a ceased bearing or broken drive belt and should **NOT** be addressed by the end user. Switch the unit off and contact your Ohaus representative for repairs. * In the event a foot (suction cup) has come loose from the bench top, the unit will register an errant E04 or E03 error message due to the instability of the unit. Press the standby button to clear this error. Firmly press down on the four (4) corners of the unit, creating a strong suction to the work surface (**DO NOT** place on bench mat). Press the standby button to resume operation.
E04	maximum load exceeded loose foot (suction cup)*	Press the standby button to clear this error. Be sure the load is within the maximum load capacity before restarting the unit. If the E04 error persists, switch the unit off and contact your Ohaus representative for repairs. * In the event a foot (suction cup) has come loose from the bench top, the unit will register an errant E04 or E03 error message due to the instability of the unit. Press the standby button to clear this error. Firmly press down on the four (4) corners of the unit, creating a strong suction to the work surface (**DO NOT** place on bench mat). Press the standby button to resume operation.

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