

# **INCU-SHAKER™ 10L**

## **Operations Manual**

Items: H1010 and H1012 (-E)



**Benchmark**   
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## **I. General Information**

***NOTE*** : Thank you for purchasing the Incu-Shaker 10L Shaking Incubator. This operations manual contains instructions for the use and care of the instrument. *Before operating the Incu-Shaker 10L Shaking Incubator, please take a few minutes to become familiar with the contents of this manual.* Please keep it available for future use.

**Prior to initial operation:**

**Please check the instrument and the accessories against the packing list when you first open the shipping carton. If you find there is damage, a discrepancy, or missing items, please contact your supplier immediately.**

### **II-1. Introduction**

The Incu-Shaker 10L Shaking Incubator series is designed for many applications used in general research laboratories. The microprocessor's constant monitoring system ensures accurate temperature and shaking speed. The beltless drive system minimizes noise and vibration while increasing the life span of the unit. Optional accessories are available for compatibility with a wide variety of laboratory vessels, including flasks, tubes, dishes and trays.

## II-2. Installation

- Choose a location that is free from rapidly changing temperature conditions (away from a heating or cooling vent).
- To assure proper ventilation, allow a minimum of 2 inches (5 Cm) of the clearance between the rear and side of the unit and the adjacent wall.
- Always ensure that the machine is installed on a level surface.
- Before plugging the machine into the outlet, ensure that the electrical specifications (listed on the serial number label on the rear side of the unit) matches the electrical specifications of your outlet.
- Always
  - Avoid direct sunlight.
  - Avoid high humidity and dusty air.
  - Avoid cool areas (below 5°C).

## II-3. Specification

### H1010

#### 1) Dimension

(Exterior) : 51(W) X 65(D) X 47(H) cm / 20(W) x 26(D) x 19(H) in.

(Internal) : 49.5(W) X 49.5(D) X 28(H) cm / 19.5(W) x 19.5(D) x 11 (H) in.

(Platform): 23.5(W) x 29.2(D) cm / 9.5(W) x 11.5(D) in.

- |                            |                                 |
|----------------------------|---------------------------------|
| 2) Temperature range :     | Ambient +5°C to 60°             |
| 3) Temperature accuracy :  | ±0.1° at 37°                    |
| 4) Temperature uniformity: | ±0.25%                          |
| 5) Speed range :           | 30 - 300 RPM                    |
| 6) Shaking Orbit:          | 19mm (3/4")                     |
| 7) Circulation Fan :       | Convection Fan                  |
| 8) Timer :                 | Digital - 1 min. to 47hr 59min. |
| 9) Motor :                 | Brushless DC - Beltless         |
| 10) Weight:                | 120 lbs / 51 kg                 |
| 10) Electrical:            | 120V or 230V, 50-60Hz           |

## H1012

### 1) Dimension

(Exterior) : 51(W) X 79(D) X 56(H) cm / 20(W) x 31(D) x 22(H) in.

(Internal) : 49.5(W) X 49.5(D) X 28(H) cm / 19.5(W) x 19.5(D) x 11 (H) in.

(Platform): 23.5(W) x 29.2(D) cm / 9.5(W) x 11.5(D) in.

- |                            |                                 |
|----------------------------|---------------------------------|
| 2) Temperature range :     | Ambient -15°C to 60°            |
| 3) Temperature accuracy :  | ±0.1° at 37°                    |
| 4) Temperature uniformity: | ±0.25%                          |
| 5) Speed range :           | 30 - 300 RPM                    |
| 6) Shaking Orbit:          | 19mm (3/4")                     |
| 7) Circulation Fan :       | Convection Fan                  |
| 8) Timer :                 | Digital - 1 min. to 47hr 59min. |
| 9) Motor :                 | Brushless DC - Beltless         |
| 10) Weight:                | 170 lbs / 78 kg                 |
| 10) Electrical:            | 120V or 230V, 50-60Hz           |

## **II-4. Features**

- 1) Constant Monitoring System (CMS) ensures precise control over speed and temperature
- 2) High Capacity, up to 5x2L
- 3) Acrylic lid allows internal viewing without disturbance.
- 4) Brushless DC motor and beltless drive system minimizes noise and vibration.
- 5) Digital control panel displays temperature, speed, and time .
- 6) Optional accessories available for most common laboratory vessels
- 7) Optional MAGic Clamp™ platform available for tool free exchange of flask clamps

### III-1. Operation

- 1) Place the power switch (located on the right side of the machine) in the "ON" position (the display will illuminate).
- 2) To set the desired temperature, press the "SET" key located underneath the temperature display. The set temperature is displayed and will blink continuously. It can be adjusted by using the UP (▲) and DOWN (▼) keys. Once the desired temperature is displayed, press the "SET" key to confirm.



#### **H1012 Series Only:**

If setting the machine to cool, turn on the "Cool-Switch", located on the front left side of the instrument. **DO NOT** power on the "Cool-Switch" if the temperature of the instrument is more than 5°C above room temperature.

\* If you do not press the "SET" key to store the desired temperature, the new temperature will not be saved and the temperature will return to the prior setting.

Temperature Range:

H1010-(E): Ambient +5°C to 60°C

H1012 (-E): Ambient -15° to 60°C



3) To set the desired time, Press and hold the "RPM/TIME" key for approximately 2 seconds until **LED** displays "t 00.00". Press the "SET" key located underneath the time/speed display. The set time is displayed and will blink continuously. It can be adjusted by using the UP (▲) and DOWN (▼) keys. Once the desired time is displayed, press the "SET" key to confirm.

\* If you do not press the "SET" key to store the desired time the new time will not be saved and the set time will return to the prior setting.

4) To set the desired mixing speed, Press and hold the "RPM/TIME" key for approximately 2 seconds until **LED** the current set mixing speed. Press the "SET" key located underneath the time/speed display. The set speed is displayed and will blink continuously. It can be adjusted by using the UP (▲) and DOWN (▼) keys. Once the desired speed is displayed, press the "SET" key to confirm.

\* If you do not press the "SET" key to store the desired speed the new speed will not be saved and the set speed will return to the prior setting.

\*\* Speed should never be set below 30 rpm.

## **III-2. Platform Installation**

### **Microplate Platform and Spring Platform Installation:**

The Incu-Shaker 10L includes a flat non-stick platform for low speed operation with many common vessels, including trays and dishes. For installation of any of the optional platforms the user must:

- 1.) Unscrew the four plastic, platform screws from the corners of the internal platform and remove the green rubber mat.
- 2.) Clean any dirt or debris from the metal base-platform and apply the desired optional platform so that the four corner holes are aligned.
- 3.) Screw in the four plastic, platform screws tightly by hand.

### **MAGic Clamp Platform Installation:**

If you have ordered the H1010-MR MAGic clamp platform as an accessory with your Incu-Shaker 10L, platform may arrive installed on the shaker. If not, please follow the steps below for installation instructions.

- 1.) Unscrew the four corner thumb screws, from the four corners of the internal platform and remove the green rubber mat.

2.) Clean any dirt or debris from the metal base-platform and apply the desired optional platform so that the four corner holes are aligned.

3.) Screw in the four plastic, platform screws tightly by hand.

### III-3. Error Messages



1) This message “rErrL” represents a low speed error

- Check the platform to ensure that nothing is obstructing its movement
- Check the set speed to make sure that it is within the acceptable range (30 to 300rpm)

**Solution** : Use your hand to manually move the platform. While the platform is moving press and hold the "STOP" and "SET" keys simultaneously. Set shaking speed to 150rpm. Confirm the speed with the “SET” key. Platform will begin to shake at set speed.



2) This message “rErrH” represents a high speed error.

- Removal of load or partial load.

**Solution** : If a vessel has been removed, replace the vessel or restart the machine.



3) This message, “Error” represents an electrical error.

- Machine has lost power during the run.

**Solution** : Check that the power cord is properly installed and restart or check that the circuit has not been interrupted and restart.

4.) Display will not illuminate

(1) Electrical connection - Please disconnect main power cord and connect again.

(2) Voltage supply - Please check voltage.

(3) Check the fuse

(4) Verify voltage on the serial number label of the machine

(5) Defective power switch (check voltage at switch)

### **III-4. Maintenance:**

**The platform of the Incu-Shaker should be cleaned regularly with a soft cloth dampened with water or alcohol. (Always ensure that the machine has been powered down prior to cleaning.)**

In the event of a spillage: Power down the unit, remove the platform and dry the internal chamber with a soft cloth. **DO NOT** attempt to operate the unit until the spillage had been properly dried.

### **IV-4. Service and Contact**

Service on the Incu-Shaker should only be performed by qualified service personnel. To request service or technical support, please contact Benchmark Scientific or your local Benchmark representative.

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