

AGITADOR MAGNÉTICO CLÁSICO/DIGITAL/DIGITAL CON CALEFACCIÓN
MAGNETIC STIRRER CLASSIC/DIGITAL/DIGITAL HOTPLATE
AGITATEUR MAGNÉTIQUE CLASSIQUE/NUMÉRIQUE/PLAQUE
CHAUFFANTE NUMÉRIQUE

Ref. | Code | Réf.

LBD005 - LBD006 - LBG010 - LBJ001

RS Lab



Este manual es parte inseparable del aparato por lo que debe estar disponible a todos los usuarios del equipo. Le recomendamos leer atentamente el presente manual y seguir rigurosamente los procedimientos de uso para obtener las máximas prestaciones y una mayor duración del mismo.

This manual should be available for all users of these equipments. To get the best results and a higher duration of this equipment it is advisable to read carefully this manual and follow the processes of use.

Ce manuel est une partie indissociable de l'appareil et doit être mis à la disposition de tous les utilisateurs de l'équipement. Nous vous recommandons de lire attentivement ce manuel et de suivre scrupuleusement les procédures d'utilisation afin d'obtenir des performances maximales et une plus longue durée de vie de l'appareil.

LANGUAGE INDEX

Spanish	1-10
English	11-19
French	20-28

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1. SAFETY INSTRUCTIONS

**Warning!**

- Read the operating instructions carefully before use.
- Ensure that only trained staff works with the instrument.

**Risk of burn!**

- Caution when touch the housing parts and the hotplate which can reach temperature of 280 °C.
- Pay attention to the residual heat after switching off.

**Protective ground contact**

- Make sure that socket must be grounded (protective ground contact) before use.

- Workers wear personal safety guards to avoid the risk from:
 - Splashing and evaporation of liquids
 - Release of toxic or combustible gases
 - Set up the instrument in a spacious area on a stable, clean, non-slip, dry and fireproof surface. Do not operate the instrument in explosive atmospheres, with hazardous substances or underwater.
 - Gradually increase the speed, reduce the speed if:
 - Stirring bar breaks away due to high speed
 - The instrument is not running smoothly, or container moves on the base plate
 - Temperature must always be set at least 50 °C lower than the fire point of the media used.
- Be aware of hazards due to:
- - Flammable materials or media with a low boiling temperature
 - Overfilling of media
 - Unsafe container
- Process pathogenic materials only in closed vessels.
 - Check the instrument and accessories prior to each use. Do not use damaged components. Safe operation is only guaranteed with the accessories described in the “Accessories” chapter. Accessories must be securely attached to the device and cannot come off by themselves. Always disconnect the plug before fitting accessories.
 - When the external temperature sensor is needed, the tip of the measuring sensor must be at least 5-10 mm from vessel bottom and wall.
 - The instrument can only be disconnected from the main power supply by pulling out the main or the connector plug.
 - The voltage stated on the label must correspond to the main power supply.
 - Ensure that the main power supply cable does not touch the hotplate. Do not cover the device.
 - The instrument may only be opened by experts.
 - Keep away from high magnetic field.
 - Do not use this instrument in an explosive environment; This instrument has no explosion-proof function.

2. PROPER USE

The instrument is designed for mixing and/or heating liquids in schools, laboratories or factories.

- Observe the minimum distances between the devices, between the device and the wall and above the assembly (min. 100 mm)

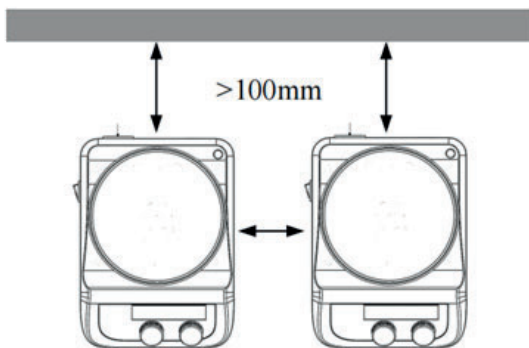


Figure 1

3. INSPECTION

3.1. Receiving Inspection

Unpack the equipment carefully and check for any damage which may have arisen during transport. Please contact manufacturer/supplier for technical support.



Note:

If there is any apparent damage to the system, please do not plug it into the power line.

3.2. Listing of Items

The package includes the following items:

Items	Qty
Main unit	1
Power cable	1
User Manual	1

Table 1

4. CONTROL

4.1. Control elements

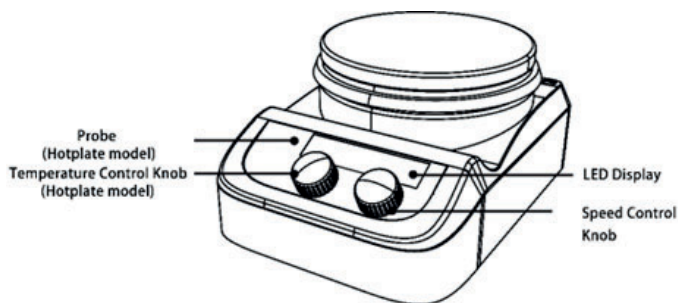


Figure 2. LED Digital Hotplate Magnetic Stirrer
Code: LBD005-LBD006 Model: RSLAB-11C

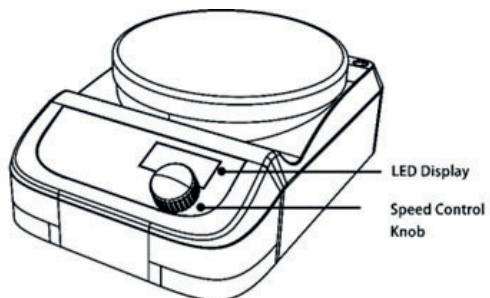


Figure 3. LED Digital Magnetic Stirrer
Code: LBJ001 Model: RSLAB-11NCD

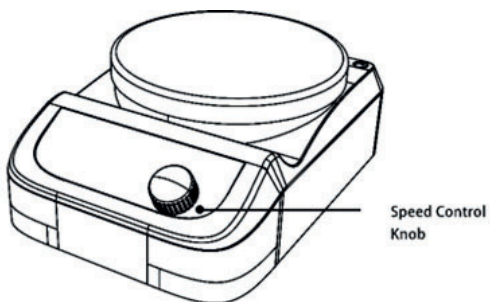


Figure 4. Classic Magnetic Stirrer
Code: LBG010 Model: RSLAB-11NCA

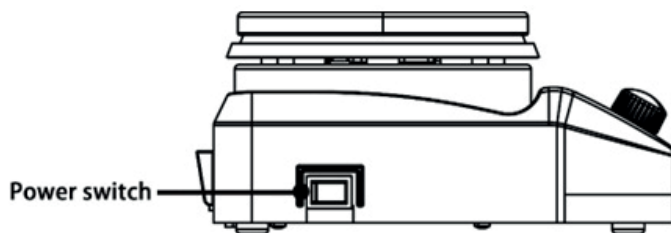



Figure 5. Power switch

	Items	Descriptions
Digital hotplate model Code LBD005 LBD006 Model RSLAB-11C	Temperature Control Knob Heat	Set the temperature parameters. The function “heating” is switched ON or OFF via push ON/OFF knob.
	Speed Control Knob Stir	Set the rotary speed. The function “Stirring” is switched ON or OFF via push ON/OFF knob.
	LED Display	LED displays the real working state and all settings.
	Probe	When the external temperature sensor PT1000 is plugged in, probe  icon is lit.
	Power Switch	Switch ON or OFF the instrument.
Digital model Code LBJ001 Model RSLAB-11NCD	Temperature Control Knob Stir	Set the rotary speed. The function “Stirring” is switched ON or OFF via push ON/OFF knob.
	LED Display	LED displays the real working state and all settings.
	Power Switch	Switch ON or OFF the instrument.
Classic model Code LBG010 Model RSLAB-11NCA	Speed Control Knob Stir	The stirring function is switched ON by rotating the knob.
	Power Switch	Switch ON or OFF the instrument.

4.2. Display



Figure 6 Digital hotplate model
Code: LBD005-LBD006 Model: RSLAB-11C

	Descriptions
Temperature display area	When heating function was switched ON, LED displays the temperature setting value and shifts to real value in 5 seconds. When the heating function is switched OFF and the hotplate temperature is still above 50 °C, LED displays “Hot”, otherwise LED displays OFF.
Speed display area	When stirring function is switched ON, LED displays the speed setting value and flashes. The setting value does not flash until real speed reaches the set point.

Table 3

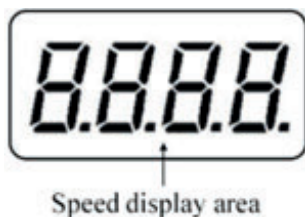


Figure 7 Digital model
Code: LBJ001 Model: RSLAB-11NCD

Characters	Descriptions
Speed display area	When stirring function is switched ON, LED displays the speed setting value and flashes. The setting value does not flash until real speed reaches the set point.

Table 4

5. TRIAL RUN

- Ensure that the required operating voltage matches the power supply voltage.
- Ensure the socket must be properly grounded.
- Plug in the power cable, ensure the power is on and begin initializing.
- Add the medium into the vessel with an appropriate stirring bar.
- Place vessel on the work plate.
- Set the target stirring speed and begin.
- Observe the stirring bar and LED display (digital model).
- Set the target temperature and start heating.
- Observe the LED display (digital hotplate model).
- Stop the heating and stirring functions.

If these operations above are normal, the device is ready to operate. If not, the device may be damaged during transportation, please contact manufacturer/supplier for technical support.



Warning!

Forbid transferring the vessel when the instrument working.

6. FUNCTION: HEATING (DIGITAL HOTPLATE LBD005-LBD006 RSLAB-11C)

The device is controlled by digital temperature control technology, which has two separate safe circuits. The hotplate is kept at a constant temperature by a digital control circuit. The hotplate temperature can also be monitored from a separate, adjustable safe circuit. The two temperature sensors internal for temperature control are built into the hotplate. The sample temperature can be monitored with an external sensor, which is not included with the equipment.

The instrument automatically displays the last running speed and temperature parameters once turned on.

Generally, the LED screen cannot display the actual temperature of sample in the vessel or hotplate surface, temperature differences as following:

- Hotplate center and outer edge.
- The sample in the vessel and hotplate surface.

6.1. Residual heat warning (HOT)

To prevent the risk of burns from a hotplate, digital hotplate has a residual heat warning function. When the heating function is switched off and the heating plate temperature is still above 50 °C, "Hot" will flash to warn that there is a hazard of burns from the hotplate. When the unit is powered off, the LED screen displays the temperature of hotplate and Hot in turn. When the hotplate temperature drops to below 50 °C, the unit will automatically switch off. If users want to turn off the LED immediately, just pull out the plug directly. When the plug is pulled out, the residual heat warning function cannot be run.

7. STIRRING

The “stirring” function of the digital LED model (LBD005/LBD006/LBJ001) is activated or deactivated by pressing the on/off speed control button. The speed ranges from 200 to 1500 rpm in 10 rpm increments.

The “stirring” function of the classic model (LBG010) is activated or deactivated by turning the speed control knob. The speed ranges from 0 to 1500 rpm.

8. FAULTS

- Instruments can't be power ON
 - Check whether the power line is unplugged
 - Check whether the fuse is broken or loose
 - Fault in power ON self-test
 - Switch OFF the unit, then switch ON and reset the instruments to factory default settings parameters.
 - Stir speed cannot reach set point
 - Excessive medium viscosity may cause abnormal speed reduction of the motor
 - Unit cannot be powered off when switched off.
 - Check if the residual heat warning function is still ON and hotplate temperature is above 50 °C (the LED screen still work and “Hot” flash).
- If these faults are not resolved, please contact supplier.

9. MAINTENANCE AND CLEANING

- Proper maintenance can keep instruments working properly and lengthen their lifetime.
- Do not spray cleanser into the instrument when cleaning.
- Unplug the power line when cleaning.
- Only use recommended cleansers:

Dyes	Isopropyl alcohol
Construction materials	Water containing tenside /Isopropyl alcohol
Cosmetics	Water containing tenside /Isopropyl alcohol
Foodstuffs	Water containing tenside
Fuels	Water containing tenside

- Before using other methods for cleaning or decontamination, the user must ascertain with the manufacturer that this method will not harm the instrument. Wear the proper protective gloves during cleaning of the instrument.



Note:

- Electronic devices cannot be cleaned with cleanser.
- If you require maintenance service, the instrument must be cleaned in advance to avoid pollution of hazardous substances, and to send back into original packing.
- If the instrument is not used for a long time, please switch it off and place it in a dry, clean, room temperature and stable location.

10. SPECIFICATIONS

Items	Specifications	
	LBD005/LBD006 RSLAB-11C	LBG010 RSLAB-11NCA LBJ001 RSLAB-11NCD
Voltage [VAC]	*100~120/200~240 100~240	
Frequency [Hz]	50/60	50/60
Power [W]	*515/15	10
Stirring point position quantity	1	1
Max. stirring quantity (H2O) [l]	3	3
Max. magnetic bar [L×Ø,mm]	50	50
Motor type	Brushless DC motor	
Max. power input of motor [W]	5	5
Max. power output of motor [W]	3	3
Speed range [rpm]	200 - 1500, increment:10	200 - 1500 (LBJ001) 0-1500 (LBG010)
Rotary speed display	LED	Scale
Plate material	Ceramic coated (LBD005) Stainless steel (LBD006)	Plastic
Dimensions of workplate (mm)	Diam. 135	Diam. 135
Heating power [W]	500	-
Temperature range [°C]	RT+5-280, increment:1	-
Temperature display [°C]	LED	-
Temperature display accuracy [°C]	±1	-
The safe temperature of hotplate [°C]	320	-
Temperature sensor in medium	PT1000	-
Control accuracy of heating temperature with temperature sensor [°C]	±0.2	-
Residual heat warning	50 °C	-
Dimensions (mm)	260×150×100	260×150×80
Weight [kg]	1.4/0.7	0.7
Permitted ambient temperature [°C]	5-40	
Permitted relative humidity	80%	
Protection class acc. To DIN 60529	IP21	

Table 5