

LGB008

Multifunction oscillation mixer



Safety code

- ☆ For safety reasons, please read the operation manual carefully before starting the operation!
- ☆ Parts are subject to heat, humidity and biological changes, which can lead to functional degradation and even loss of safety and cause accidents!

Contents

Foreword.....	3
Instrument use environment.....	3
Safety Tips.....	3-4
A product brief description.....	5
Two product models and their main technical parameters.....	5
Three oscillator appearance function introduction.....	6-7
Four operating instructions.....	7-9
4.1 Installation of standard gaskets and plate clamps.....	8
4.2 Turning the power on/off.....	8
4.3 Operating the Oscillator.....	9
Five maintenance items.....	9
Six Fixture List.....	10-11
Seven fault handling.....	12
Eight warranty (including repair) based on	13
Nine packing list.....	14
Certificate of Conformity.....	15
Maintenance record.....	16

Foreword

This manual is copyrighted by Magal and no one may reprint or distribute any content of this manual, including pictures and audiovisual materials.

The device operator can copy some of the sections of this operating manual, but only for internal use, for example.

Guide users how to deal with emergencies. The chapters are clearly marked in the manual's catalogue.

Magal is not responsible or liable for any damage to the instrument caused by the user's failure to use the "instrument environment" as stated in the manual.

Magal reserves the right to modify the contents of the operating manual at any time without proper notice.

Instrument use environment



To ensure the continued use of the machine, the following factors may damage the instrument:

- chemical effects.
- environmental impacts, including natural UV radiation.
- Corrosion and wear of hood parts and other safety parts.

- * indoor use;
- * Altitude: $\leq 2000\text{m}$;
- * The applicable ambient temperature range of the instrument is $+5\text{ }^{\circ}\text{C} \sim +40\text{ }^{\circ}\text{C}$;
- * The working temperature range of the instrument is $\leq 80\%$;
- * ***The working model of the instrument working power supply and its main technical parameters;***
- * There must be sufficient ventilation in the room;
- * There are no vibrations and airflows around the performance;
- * There is no conductive dust in the surrounding air, explosive gas and corrosive gas;

safety warning

- * Use this machine for the first time, please read this manual carefully!
- * The oscillator can only be operated by trained and authorized personnel;
- * Equipment maintenance can only be done by Magal or Magal authorized agents;
- * The following materials are strictly prohibited in the instrument:
 - Flammable and explosive materials;
 - strong chemical action materials;
 - Toxic or radioactive substances, or pathogenic microorganisms.
- * Only qualified maintenance personnel can use the appropriate tools to

perform maintenance operations on the oscillator system.

* If the operator encounters a situation not mentioned in this manual, please contact the authorized agent of Magal or Magal to inquire about the correct treatment.

* Try to use the accessories provided by Magal. If the user wants to use other accessories, Magal will not be responsible for the adverse consequences. However, the user can apply to Magal to verify that the accessory meets Magal's requirements.

* The oscillator must be inspected and maintained at specified intervals.

Safety warning sign description



Note: Please read the instruction manual carefully before using the instrument!



Attention: Danger of high voltage! Risk of electric shock!



Meaning of the safety instructions

In order to avoid damage to surrounding people or damage to surrounding objects and the environment, please be sure to follow all safety instructions in this user manual.

In addition to accident prevention, environmental protection, and recognized professional rules in safety and occupation, including the country where the user is located and the local laws and regulations installed in this instrument, they must be carefully observed.

Neglecting the consequences of safe operating procedures

Any violation of safe operating procedures, laws, regulations and rules will lead to harm to people, objects and the environment.



Safety Precautions

* **Do not plug or unplug the power plug and toggle the power button**

when the hands are in possession of liquid!

- * Do not plug or unplug the power plug when the instrument is powered!**
- * It is strictly forbidden to maintain and scrub the instrument under power-on state!**
- * It is forbidden to oscillate the sample capacity beyond 70% of the test tube capacity.**

The container of the product must be covered!

- * It is strictly forbidden to install the instrument on the work surface with unevenness and shaking vibration!**
- * When installing the gasket or clamp, make sure that the installation is in place to prevent the gasket and clamp from flying out during work!**
- * Do not oscillate the sample volume beyond the maximum load of the instrument!**

1. Product Description:

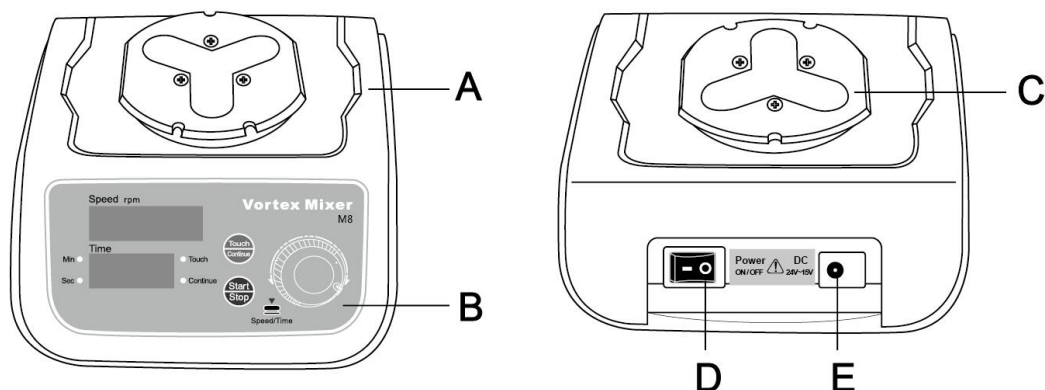
Magal multifunction oscillating mixer adopts international advanced design concept and manufacturing technology, the shape is smooth and beautiful, the structure is compact and firm, the high versatility, the simple operation and so on, it is a rare instrument for scientific research experiments. This oscillator is ideal for routine equipment for fixing, oscillating, and mixing various reagents, solutions, and chemicals.

2. Product model and its main technical parameters

Product number	LGB008
Input power	AC100-250V/50/60Hz
Output power [W]	18W
Motor / drive mode	DC24V brushless motor / direct drive
control method	PWM stepless frequency control
Operation method	Jog/continuous
Power fuse	PPTC / self-recovery fuse / no need to replace
Maximum load	1.5Kg
Speed range [r/min.]	0/200-3, 000r/min.
Oscillation mode	circumference
Speed function / display	All segments / highlight LED digital tube
Time function / display	Digital timing 1S-999min. Countdown, jog timing / highlight LED digital tube
Circumference diameter [mm]	4.6
Weight [Kg]	4.5
Size: length × width × height [mm]	198×138×67
Noise at maximum speed	≤43dB(A)
Fastest acceleration time	≤3s
Fastest deceleration time	≤3s

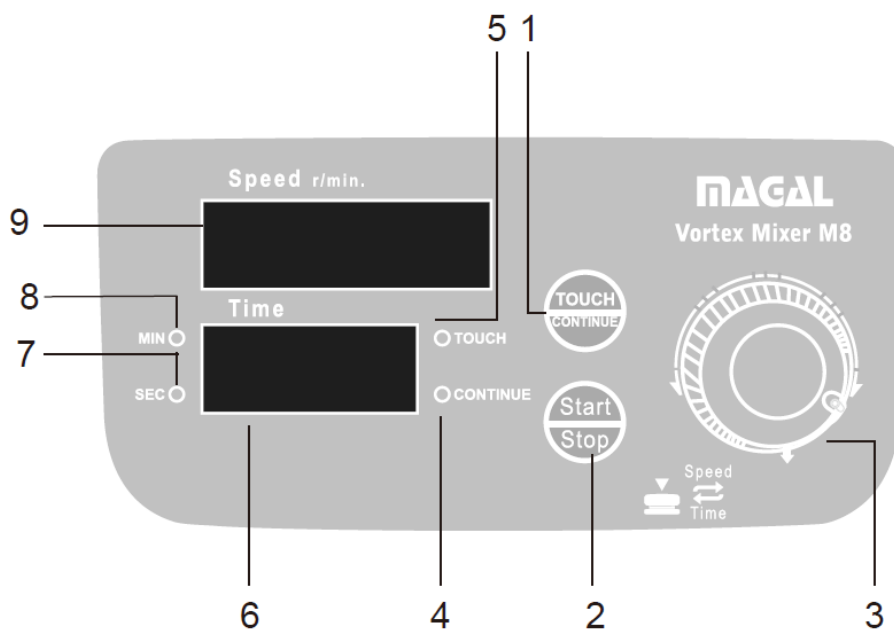
Note: Ambient temperature 23 ° C / at 23 ° C ambient temperature

3. Oscillator appearance function introduction



- A. Main unit
- B. Operation panel
- C. Oscillation output fixed board
- D. Power switch
- E. DC24V power jack

The picture above shows the LGB008 oscillator (appearance diagram 1)



The picture above shows the LGB008 oscillator (function diagram 2)

Description shown in function diagram 2

1. **Touch / Continue Jog and continuous mode button.**
2. Start / Stop Start and stop buttons. When in jog mode and LGB008-2~LGB008-11 clamps, press and hold this button to make short-time jog oscillation. When starting and stopping, the instrument will issue a “drip” and “drip” operation prompt respectively.
3. Speed / Time speed and time adjustment knob, press down to select three parameters: “speed”, “minute” and “second”. When the display is flashing, you can adjust the value and rotate clockwise to increment. Counterclockwise is the decrement. When it flashes 3 times, it automatically defaults to the set value. If the other parameter values are continuously adjusted and the next parameter is continuously operated, the default value is the set value.
4. Continuous oscillation indicator.
5. Jog mode indicator.
6. Time display, the corresponding indicator lights up in minutes or seconds.
7. Time indicator, in seconds.
8. Time indicator, in minutes.
9. Speed display in rpm, ie rpm.

4. Operation instructions



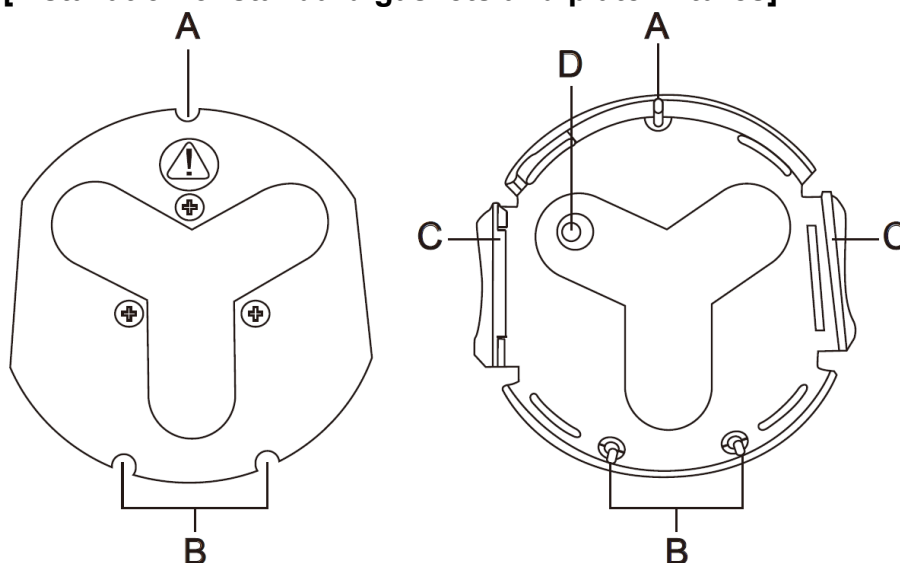
Note: Before using the instrument, please ensure that the instrument is transported without damage!

- * **Whether the appearance of the instrument is brand new!**
 - * **The oscillating output fixing plate is firmly fixed to the main unit without looseness!**
 - * **Whether the adjustment knob is fixed vertically on the operation panel, with or without tilt!**
 - * **Is the cushioning pad loose?**
 - * **Whether the attachment is brand new!**
- *The instrument can be safely used without any of the above phenomena****



If there is any of the above, please contact the manufacturer or the authorized dealer of the manufacturer in time, and do not repair it yourself without the guidance of professional maintenance personnel!

4.1 [Installation of standard gaskets and plate fixtures]



A/B. Directional guide groove C. Buckle D. Speed recognition sensor point

The picture above shows the LGB008 oscillator (Figure 3 for board fixture installation)

Place the instrument in the appropriate operating area, plug in the power supply, ensure that the power supply is OFF, and select the desired gasket or plate clamp. **When installing a standard gasket (rubber gasket), fix one side, and use the flexibility of the gasket to insert the other side into the oscillation plate output fixing plate.**

When installing the plate type fixture, first align the directional guiding groove to fix one side of the plate type clamp to the card position of the oscillating plate output fixing plate, and the other side to manually push the buckle inward. Gently press down and when you hear a click, it means that it is installed in the correct position (to verify that it is fixed in place, just pull the clamp up slightly).

4.2 [Turn On/Off Power]

The power switch button in the appearance diagram 1 is “powered” when the “ I ” is turned to the “ON” position, and the power is turned off when the “O” is turned to the “OFF” position;

4.3 [Operating Oscillator]

1. Turn on the power, the instrument defaults to jog mode.
2. When using LGB008-1 standard gasket, the maximum speed limit is 3000RPM (please refer to the six fixture list for the speed limit of each clamp), gently press down the adjustment knob, the speed display is flashing, turn the knob, adjust the need The speed is counterclockwise and the amount is clockwise. Press the test tube or centrifuge tube in the recess of the standard gasket. The instrument will give a “drop” operation sound, the instrument will run, and the sample will automatically stop when it leaves the instrument. The time shows the running time accumulated in positive timing.
3. When using the plate type fixture, select the appropriate sample adapter, place the sample to be mixed, and select the operation mode by pressing button 1. If you use the Touch mode, adjust the required rotation speed, press and hold the Start / Stop button, the instrument will start running. Release this button, the instrument stops, the time shows the running time accumulated in positive timing; if you want to use the continuous running mode, you can use the Touch / Continue button to switch, set the required speed and time, press the Start / Stop button, The instrument runs at the set speed and time. The time is counted down. When the scheduled time is reached, the instrument stops automatically. The time display shows End, and the instrument emits a “drip” stop sound.

5. Maintenance matters

Do not attempt to clean the instrument while the power cord is plugged in or the power switch is on. If the equipment or accessories are contaminated by pathogenicity, toxicity or radioactive materials, it is the responsibility of the user to perform proper purification. This should be explained when developing the “Laboratory Biosafety Manual”. Cleaning and Decontamination In addition to the other requirements mentioned in this chapter, please contact our company to check if they are likely to damage the equipment. If you plan to return equipment or accessories to the company or request repair, you must ensure that the equipment or accessories are clean and harmless to the human body! Do not use organic solvents because it can decompose the grease in the motor bearings; during the cleaning process, liquids, especially organic solvents, cannot be contacted to the motor shaft and the bearings.

5.1 It is not possible to use a pointed object to collide with the jig. To prevent bumping during handling and disassembly, it is necessary to prevent the jig and the main body from being cracked during use due to scratches or trauma.

5.2 Regularly check the fixture components (especially the plastic brackets) for corrosion spots, grooves, and small cracks. If any of the above conditions are found, stop using them and contact the production unit.



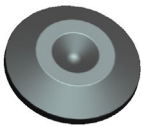

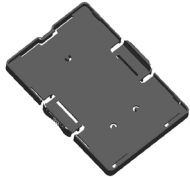
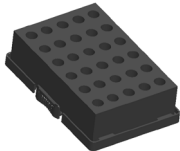

When disassembling the clamp, both hands should tighten the buckle inward and lift it up vertically, do not shake it from side to side!

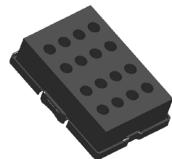





5.3 When cleaning the fixture, clean it with a mild detergent dampened with a sponge or cotton cloth, then wash off the detergent with distilled water. Do not sprinkle or spray the rotor with water as the liquid may be left somewhere and cause corrosion. Allow to invert and dry after washing.

5.4 Carefully wipe the surface of the instrument with a soft cloth dampened with a mild detergent, then remove the detergent with a clean, damp cloth.

5.5 If there is a major problem with the instrument, if the power supply is not working properly, there is a burnt smell inside the machine, the fixture is broken, and the instrument shakes sharply during operation. Please contact the manufacturer or the authorized dealer of the manufacturer in time. Repair by yourself under the guidance of personnel!

6. Fixture list

Product name	Model / speed	use	image
Standard gasket Standard	LGB008-1 Max.3000rpm	It is used to place test tubes and small containers with a diameter of not more than 50mm. It adopts a trough structure to prevent the container from slipping outside during work.	
Flat bottom flask fixture Standard	LGB008-2 Max.3000rpm	For the placement of flasks with a diameter not exceeding 85 mm.	
Enzyme plate fixture Standard	LGB008-3 Max.1500rpm	Used to clamp the ELISA plate.	
Test tube gasket Standard	LGB008-4 Max.1500rpm	Shake the tube with a diameter of 10 mm and a number of 30 holes.	
Test tube gasket Standard	LGB008-5 Max.1500rpm	A tube with a diameter of 17 mm and a number of 5 holes was oscillated.	

Test tube gasket Standard	LGB008-6 Max.1500rpm	A test tube having a diameter of 12-13 mm and a number of 16 holes.	
Test tube gasket <i>Optional</i>	LGB008-7 Max.1500rpm	A sample bottle with a diameter of 15 mm and a number of 12 holes.	
Test tube gasket <i>Optional</i>	LGB008-8 Max.1500rpm	PCR 0.2 ml × 8 tubes or 0.2 ml tubes were used in PCR 96-well plates.	
Test tube gasket <i>Optional</i>	LGB008-9 Max.1500rpm	A test tube having a diameter of 17 mm and a number of 12 holes was oscillated.	
Test tube gasket <i>Optional</i>	LGB008-1 0 Max.1500rpm	Shake 50 ml, 2 well number of tubes.	
Test tube gasket <i>Optional</i>	LGB008-1 1 Max.1500rpm	Shake the diameter of 25mm, 4 holes in the number of vials / sampling bottles.	

7. Troubleshooting

The following table lists the faults of the instrument and the causes of the related faults and the treatment methods. You can follow the prompts to eliminate them. If the user still cannot solve the faults or the faults are not included in the list below, the user should contact the production immediately. Unit maintenance staff.



After an abnormality occurs, turn off the power, unplug the plug, and then start the fault after troubleshooting.

Table 1: Fault phenomenon, cause and troubleshooting

Fault phenomenon	Causes and troubleshooting
The instrument does not rotate	<ol style="list-style-type: none"> 1. Check if the power socket and wiring are good, and whether the power socket has power. 2. The power switch is not in good contact. 3. If it cannot be excluded, please contact the manufacturer's maintenance personnel.
Suddenly stopped while the instrument is running	<ol style="list-style-type: none"> 1. Is the power connection good? 2. The speed display bar displays: 0001, speed measurement failure; contact the manufacturer's maintenance personnel. 3. The speed display bar displays: 0002, the motor or motherboard is faulty; contact the manufacturer's maintenance personnel. 4. Does the instrument have a burnt smell? If it is, please unplug the power immediately and contact the manufacturer's maintenance personnel. 5. The voltage range may be too large. Check if the power supply voltage meets the specified AC100-250V.
Instrument vibration noise is relatively large	<ol style="list-style-type: none"> 1. The fixture has a critical speed and some vibrations of the machine are normal. 2. Check if the clamp is fastened. 3. Check if the fixture is installed. 4. Check the oscillating output fixing plate and rotate it by hand. If it cannot be rotated smoothly, there may be a problem with the drive shaft or the motor. If it cannot be eliminated, please contact the manufacturer's maintenance personnel.

The panel LED indicator does not light after the power switch is turned on.	<ol style="list-style-type: none">1. The power supply is not connected, check the power distribution.2. Switch the remaining indicators to check if they are normally lit. If not, please contact the manufacturer.3. If it cannot be excluded, please contact the manufacturer's maintenance personnel.
Switching speed time button does not respond	Please contact the manufacturer's service personnel!
Beyond the above fault content	Solved by the manufacturer's professionals!

8. Warranty (including repair) basis

The warranty period (the repair period) starts from the time the user receives the product, and during the warranty period (the repair period), if the product fails, the sales company authorized by the production unit or the production unit is responsible for free on-site repair, if necessary replacement Parts are caused by their own quality, not by improper use of humans, they can be replaced free of charge, otherwise they will be charged. The enclosure is not covered by the warranty!

Warranty (repair) basis

- The user operates according to the requirements of this instruction manual;
- The implementation of installation, commissioning, moving position, adding accessories, maintenance, etc. is carried out by the designated or specialized personnel authorized by the production unit or the production unit;
- The usual maintenance is performed regularly according to the methods specified in this instruction manual;
- If the above requirements are not met, that is, the damage caused by improper use by the user, the sales company authorized by the production unit or the production unit is responsible for repair, but it is not free.

Magal guarantees that the machine is in the 18 months after the sale, and any problems related to the quality of the machine (except for damage caused by improper use by the user), the unit is responsible for the warranty. If the warranty period is exceeded, it will be repaired for a fee.

9. Packing list

Serial number	name	Quantity	Remarks
1	Host	1 set	
2	Standard gasket LGB008-1~LGB008-6	1 set	
3	Additional fixture		By order contract
4	Certificate of Compliance	1 copy	
5	Quality Assurance page	1 copy	
6	Operation manual	1 copy	
7	Power Adapter	1	



When unpacking, please check it in time. If there is any discrepancy, please contact the production company authorized by the production unit or production unit in time!

Maintenance record
