

COMECTA



Orbital Shaker

Model AG-200 Cod. 5312010

Model AG-200-A Cod. 5312011

Model AG-200-B Cod. 5312012

OPERATIONS MANUAL

Safety Warnings and Guidelines

1. Important operation information of the security:

Before the users' operation, they should have a perfect conception of how to use the Instrument. Therefore, read this Manual carefully before using it.



Operation before reading the Manual is forbidden. Read the guidelines and directions below and carry out the countermeasure according to them.

2. Security:

The operation, maintenance and repair of the Instrument should comply with the basic guidelines and the remarked warning below. If you don't comply with them, it will have effect on the scheduled using life of the Instrument and the protection provided.



This product is a normal and an indoor Instrument which conforms to Standard B style- I type- GB9706.1.



Before operation, read the Manual carefully. These units are designed for use in laboratory environments by persons knowledgeable in safe laboratory practices.



The operator should not open or repair the Instrument by himself, which will result in losing the qualification of repair guarantee or occur accident. If there is some wrong with the Instrument, the company will



A.C. power's grounding should be reliable to safeguard against an electric shock. The 3-pin plug supplied with thermo-shaker's power cable is a safety device that should be matched with a suitable grounded socket.



During the normal operation, the temperature of metal block will be very high. There will be scald or boiling of the liquid. Therefore strictly prohibit any part of the body to touch the Instrument from scald.



Before power on, guarantee the voltage used should be accordant to the voltage needed, and the rated load of electrical outlet should not lower than the demand. If the electric line is damaged, you should replace it with the same type. You should assure there's nothing on the electric line and you should not put the electric line in the ambulatory place. Hold the jack when you pull out the electric line, and don't pull the electric line.



Power off when you finish your work. Pull off the connector plug when there's long time no use of the Instrument and cover it with a cloth or plastic paper to prevent from dust.



Pull the connector plug from the jack at once in the following cases, and contact the vendor:

- There is some liquid flowing into the Instrument;
- Drenched or fire burned.
- Abnormal operation: such as abnormal sound or smell.
- Instrument dropping or outer shell damaged.
- The function has obviously changed.

3. The maintenance of Instrument

The platform and clamp should be cleaned by the cloth stained with a little alcohol. If there are smutches on the Instrument, clean them by soft cloth stained with cleaning cream .

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Chapter 1 Introduction

AG-200 Orbital Shaker is a powerful variable speed shaker which provides efficient orbital motion. Speed and time are under microprocessor control. The shaker can be applicable in different laboratories: in microbiology, chemistry, immunology, biochemistry, and molecular biology.

Features:

- **LCD display. It is easy to setup and use.**
- **Set-up the digital timer within 0~100hrs. Beep-signal and stop of the timing completion.**
- **Gentle, reliable shaking with long-life direct brushless motor.**

Chapter 2 Specifications

1. The normal operating condition:

Ambient temperature: 4°C ~ 45°C

The relative humidity: ≤70%

Power supply: 24VDC 2.0A

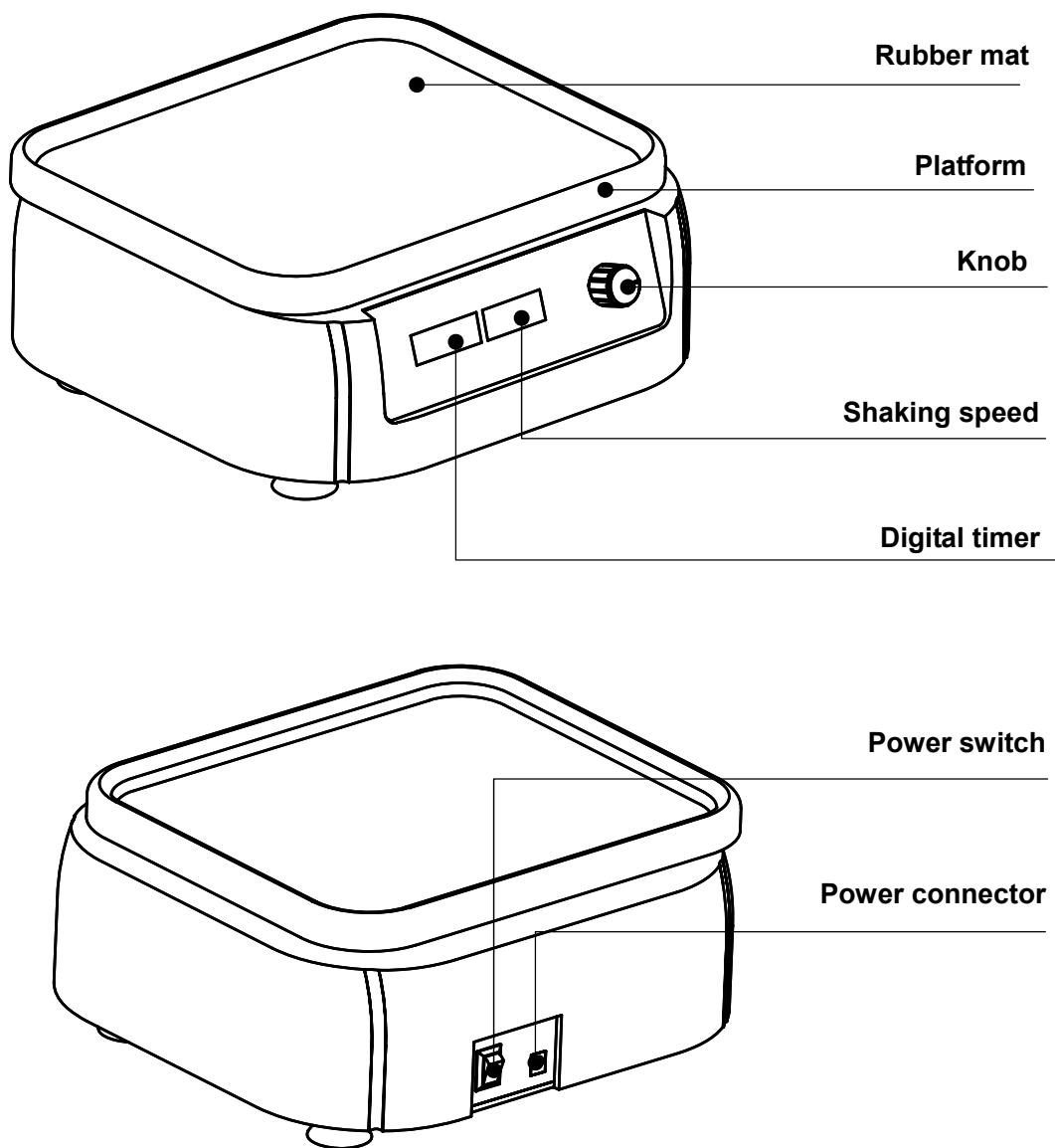
2. The basic parameters and the function.

Type Parameter	OS-200
Shaking Speed	50~250rpm
Orbit	20mm
Digital timer	1min~99h59min
Max. load capacity	2.5kg
Power supply	50W
Dimension(mm)(L×W×H)	280X270X110
Weight(kg)	7.5

Chapter 3 Preparations

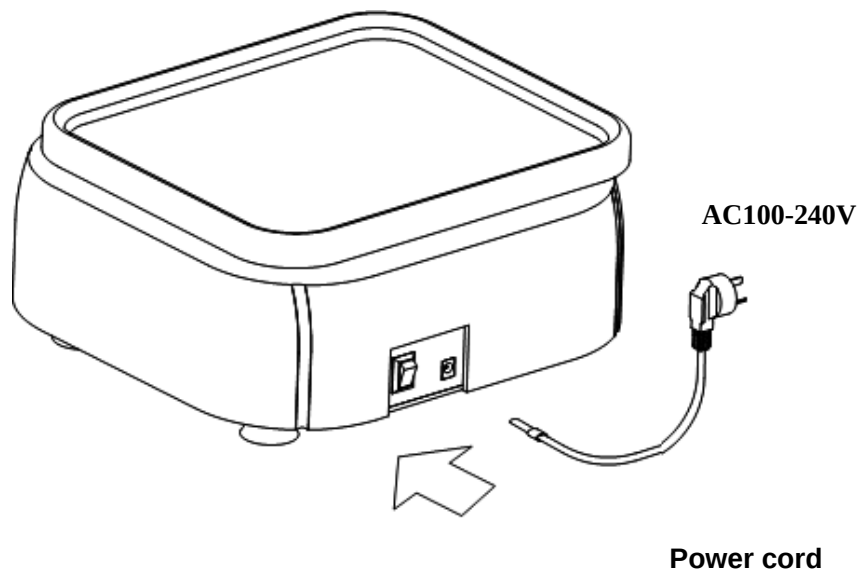
This chapter introduces Orbital Shaker's mechanical structure and the central panel's functions and some preparations before power-on. You should be familiar with this chapter before the Orbital shaker is first operated.

1. Structure Description



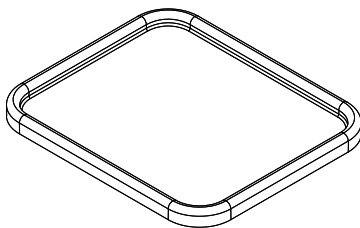
2. Power connection

Place the Orbital Shaker on the horizontal even working surface. Plug the extend power supply unit into the socket at the rear side of the shaker. The external power supply unit (power adapter AC100-240V) ensures the external safety of the unit.

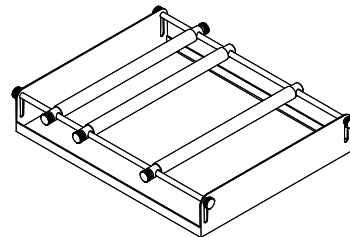


3. Platform installation

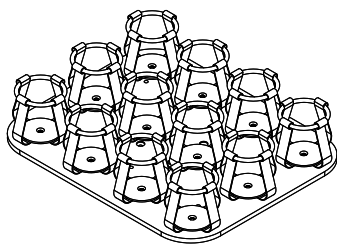
Three different models of platforms made three different shaker AG-200 models:



PP-1 = Model AG-200

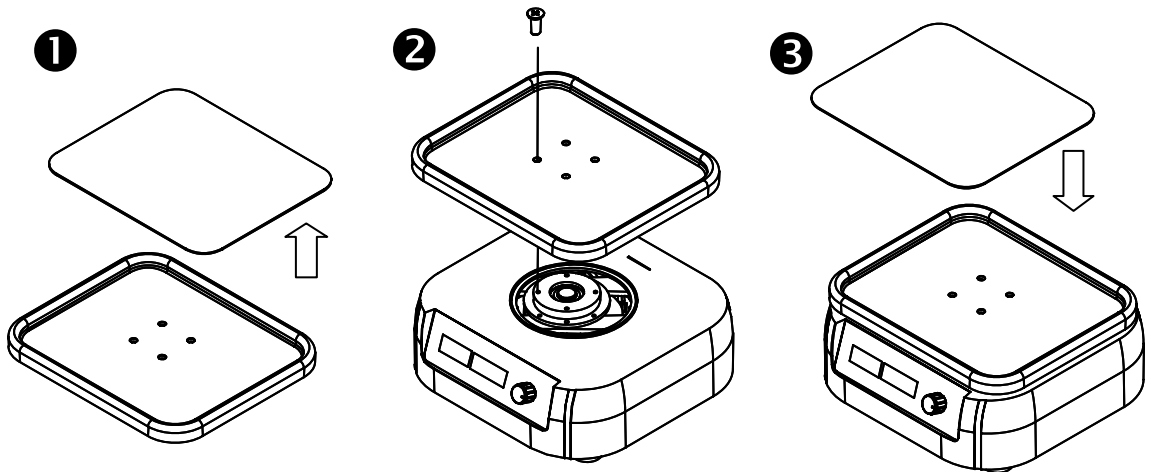


UP-1 = Model AG-200-A



PP12-100 = Model AG-200-B

1) Installation for platforms UP-1 and PP-1

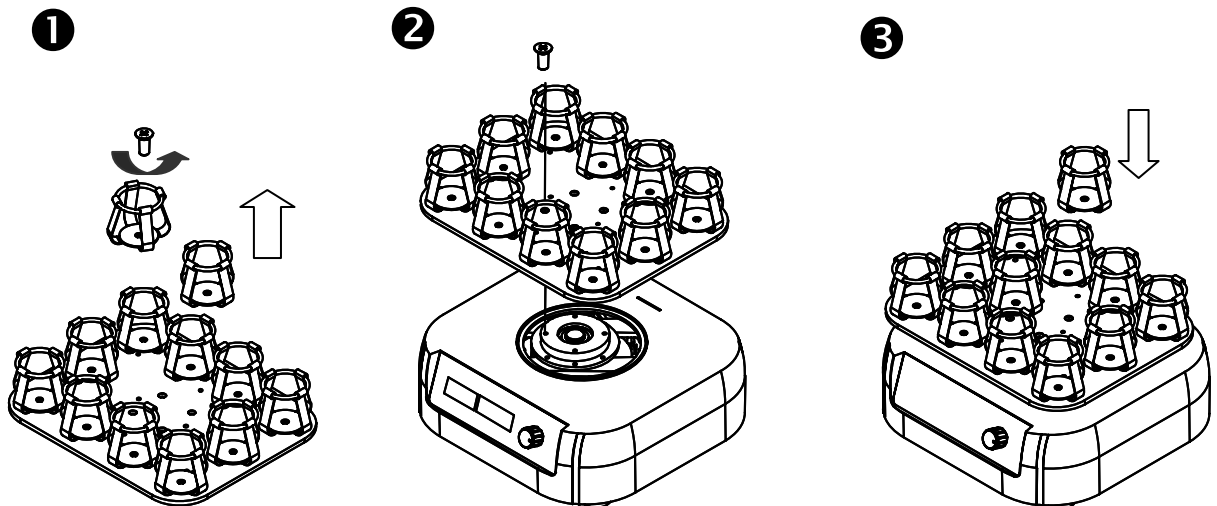


Take out non-slip rubber mat.

By inserting 4pcs of M4X8 screws, fix the platform onto the main part.

Then, take back the non-slip mat in the platform.

2) Installation for platform PP12-100



Take out the two middle clamps.

By inserting 4pcs of M4X8 screws, fix the platform onto the main part.

Then, take back the two middle clamps in the platform.

Chapter 4 Operation Guide

1. Shaking speed and timing setting

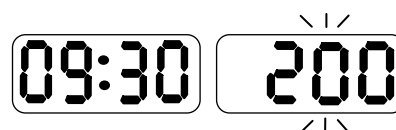
- a) When the instrument powers on, display screen will show “8” one by one. The instrument goes into the initial state with the sound of “du...”



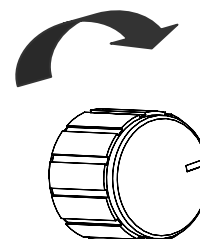
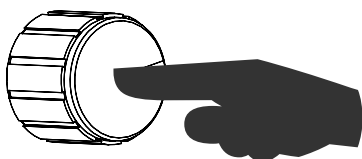
- b) After about 2s later, time display window shows 9:30 as the set timing time. It means that the timing time is 9 hours and 30 minutes. The speed display window shows 200. It means the set shaking speed is 200rpm.



- c) Press the knob and keep off at once the first time, the tens digit of speed will flicker. Increase the speed by turning the knob clockwise, and decrease the speed anticlockwise.



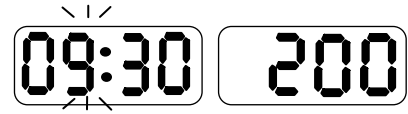
Press and keep off at once



- d) Press the knob and keep off at once the second time, the units of time will flicker. Increase the timing by turning the knob clockwise, and decrease the timing anticlockwise.



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- e) Press the knob and keep off at once the third time, the hundreds of time will flicker. Increase the timing by turning the knob clockwise, and decrease the timing anticlockwise. This function can accelerate the timing setting.



- f) After setting finished 4s later, the flickering will disappear, and the setting value will be defaulted. In the same time, hold down the knob (about 1s) immediately to start mixing and timing.

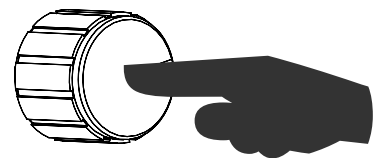
Notice:

- 1) When setting speed, in the process of turning the knob anticlockwise it turns "OFF" in display, it means closing the shaking speed.
- 2) When setting timing, in the process of turning the knob anticlockwise it turns "00:00" in display, it means the timing is "∞".

Press and keep off at once

2. Operation and stop

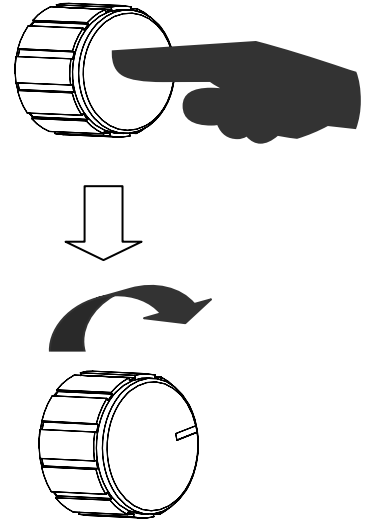
- a) Hold down the knob (about 1s), the instrument will run in current speed, in the meantime, the timing begin counting down.
- b) In the process of running, hold down the knob (about 1s), the mixing and timing will stop, and then the display will show set value.



3. Changing the speed and timing during running.

- a) In the process of running, press the knob instantly first time, the tens digit of speed will flicker. Then, turn around the knob to change speed.
- b) Press the knob instantly second time, the units of time will flicker. Then, turn around the knob to change timing.
- c) After about 4s, flickering disappears, the display will show set value. Then, the instrument will run according to new set speed and timing.

Press and keep off at once



Chapter 5 Failure analysis and handling

Failure analysis and processing procedures

No.	Phenomenon	Possible Causes	Processing Procedure
1	Display window doesn't response after power-on	No power	Check the connection of power
		Bad Fuse	Exchange fuse (24VDC 2A)
		switch Failure	Exchange the switch
		Others	Contact the seller
2	Shaking too big	Mixing samples are placed dissymmetrical	Place the mixing samples symmetrical
3	The actual speed is different from the displayed speed	Broken sensor or loose contact of the module	Contact the seller
4	"ERR" in the display	Shaking speed is out of control	Contact the seller
5	Press invalid	Knob failure	Contact the seller

Annex 1 : Wiring Diagram for AG-200 orbital shaker

