

Grant-bio

Microplate shaker PMS-1000

Operating instructions



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1. Safety

The following symbols mean:-



Caution: Read these operating instructions fully before use and pay particular attention to sections containing this symbol

Always observe the following safety precautions

-  Use only as specified by the operating instructions, or the intrinsic protection may be impaired.
-  After transport or storage in humid conditions, dry out the unit before connecting it to the supply voltage. During drying out the intrinsic protection may be impaired.
-  Connect only to a power supply with a voltage corresponding to that on the serial number label.
-  Ensure that the mains switch and isolating device (power supply connector) are easily accessible during use.
-  Before moving, disconnect at the power supply socket.
-  If liquid is spilt inside the unit, disconnect it from the power supply and have it checked by a competent person.
-  It is the user's responsibility to carry out appropriate decontamination if hazardous material is spilt on or inside the equipment.
-  Do not place a load exceeding 0.3 kg on the unit.
-  Before using any cleaning or decontamination method except those recommended by the manufacturer, user should check with the manufacturer that the proposed method will not damage the equipment.
-  Clean the unit only with a damp cloth, do not use chemical cleaning agents.

2. General Information

- 2.1 The Microplate shaker PMS-1000 is designed for immuno-diagnostics and is used for mixing biological liquids as well as incubation and cultivation of biological liquids according to the program set by the operator.
The device can also be used for mixing any biological and chemical components. The device can be used in all areas of medicine, biotechnology and microbiology laboratory research.
- 2.2 The principle of the PMS-1000 operation is based on the creation of the rotational movement of the Shaker platform with a constant amplitude. The rotational speed is controlled from the front panel.

3. Getting started

3.1 Unpacking

Remove packing materials carefully and retain for future shipment or storage of the unit.

3.2 The PMS-1000 set includes:

- Microplate shaker PMS-10001 piece
- Platform1 piece
- Spare rubber drive belt1 piece
- Specifications; Operating Manual; Certificate1 copy
- Mains adapter1 piece

3.3 Optional extras

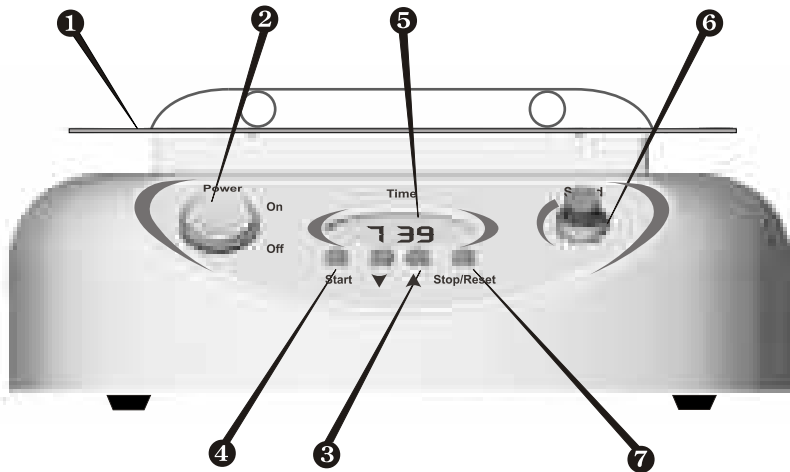
Platform MPP-4 for 4 immunoplates.

3.4 Platform replacement

Remove the platform and install the new platform MPP-4 fitting the pins on the bottom side of the platform into the holes on the moving base.

Note! When using MPP-4 platform do not set speed higher than 800 rpm.

4. Operation of PMS-1000



- 4.1 Connect the PMS-1000 to the adapter and the adapter to the mains power.
- 4.2 Place the plates on the Shaker platform (1) and fix them with the screws.
- 4.3 Switch **On** the main switch (2), located on the front panel of Shaker, the timer display (5) will be illuminated.
- 4.4 Using ▾ and ▲ buttons (3) set necessary working time with the help of timer display. The set time is displayed in hours and minutes (hh:mm).
- 4.5 Press **Start** (4) button. The platform begins the shaking movement and the timer starts counting up the set time interval (time interval less than 1 hour is displayed in minutes and seconds (min:sec), more than 1 hour - in hours and minutes (hh:mm)).
- 4.6 Using the **Speed** control (6) set the frequency of the platform shaking.

- 4.7 After the set time has expired, the shaking stops and the set working time is displayed.
- 4.8 For repeat operations with the same working time and frequency press **Start** button.
- 4.9 If necessary PMS-1000 can be stopped before reaching the set time by pressing the **Stop** button (7). For 20 seconds the display will show the elapsed time, after that, the set time.
- 4.10 If the **Stop** button is pressed for more than 3 seconds the set time will be deleted.
- 4.11 If the working time is not set (or is deleted) and the indicator shows [0000], pressing of the **Start** button cause continuous operation of the Shaker until the **Stop** button is pressed.
- 4.12 Once all operations are finished, turn the main switch into position **Off**.

5. Specifications

5.1 PMS-1000 should provide:

- smooth rotational movement of the platform;
- continuous adjustment of the revolution speed;
- even amplitude across the whole platform of the Shaker;

5.2 Specification

This equipment is designed for operation in closed laboratory rooms at ambient temperature from +5°C to +40°C and maximum relative humidity 80% for temperatures up to 31°C decreasing linearly to 50% relative humidity at 40°C.

- Speed range150-1000 rpm
(150-800 rmp using MPP-4)
- Amplitude of rotational shift 2 mm
- Timer1min-23h 59min
- Working regime adjustment time10 s
- Number of immunoplates2 pieces
- Working voltage; external power source
in accordance with local standards.....12V, 500mA
- Weight2.5 kg
- Dimensions220x205x90 mm

6. Guarantee and Service

6.1 Guarantee

When used in laboratory conditions and according to these working instructions, this product is guaranteed for TWO YEARS against faulty materials or workmanship.

6.2 Service

For service, return for repair to our Service Department in the UK or, in other countries, to our distributor.

6.2.1 Replacing Drive belt

1. Remove the platform.
2. Remove the four fixing screws from the blue supporting platform and remove it.
3. Remove three fixing screws securing the round counterbalance disc and remove it.
4. Replace the rubber belt.
5. Reassemble the unit.

Declaration of Conformity

| | |
|------------------------------|---|
| Manufacturer:- | GRANT INSTRUMENTS (CAMBRIDGE) LTD, Shepreth, Cambridgeshire SG86GB |
| Equipment name/type number:- | PMS-1000 |
| Description of Equipment:- | Microplate Shaker |
| Directives:- | EMC Directive 2004/108/EC Low Voltage Directive 2006/95/EC |

I confirm that this apparatus conforms to the requirements of the above Directive(s)

| | |
|------------------------|---|
| Applied Standards:- | |
| Harmonized Standards:- | <u>EN 61326:</u> Electrical equipment for measurement, Control and laboratory use - EMC requirements <u>Part 1:</u> General requirements <u>EN 61010:</u> Safety requirements for electrical equipment for measurement, control and laboratory use. <u>Part 1:</u> General requirements |

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