

**Grant bio**

# Vortexer PV1

*Operating instructions*

*For version V.1GW*





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# 1. Safety

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The following symbol means



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

## GENERAL SAFETY

- ☞ Use only as specified in the operating instructions provided.
- ☞ The unit should be saved from shocks or drops.
- ☞ After transport or storage dry out the unit (2-3 hrs) before connecting it to the mains.
- ☞ Before using any cleaning or decontamination method except those recommended by the manufacturer, check with the manufacturer that the proposed method will not damage the equipment.
- ☞ Do not make modifications to the design of the unit.

## ELECTRICAL SAFETY

- ☞ Connect only to a power supply with a voltage corresponding to that on the serial number label.
- ☞ Use only the external power supply unit provided with this product.
- ☞ Ensure that the external power supply is easily accessible during use.
- ☞ Before moving the unit, disconnect the external power supply from the power outlet.
- ☞ If liquid is spilt inside the unit, disconnect it from the external power supply and have it checked by a competent person.

## DURING OPERATION

- ☞ Use only the tubes smaller or equal to 28,5 mm in diameter.
- ☞ Do not stop the vortex head rotation with a hand during operation.
- ☞ Do not operate the unit in environments with aggressive or explosive chemical mixtures.
- ☞ Do not operate the unit if it is faulty or been incorrectly installed.
- ☞ For indoor use only. Do not use outside laboratory rooms.

## BIOLOGICAL SAFETY

- ☞ It is the user's responsibility to carry out appropriate decontamination if hazardous material is spilt on or inside the equipment.

## 2. General information

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Vortexer PV1 is designed for mixing substances in tubes using the eccentric mechanism. Vortexer can be used in a variety of applications including general test tube mixing, tissue samples mixing, cell's suspensions vortexing, chemical reagents mixing, etc.

The Vortexer is equipped with 20 mm diameter single Polystyrol mixing cup for mixing one tube at a time.

Vortexer PV1 is intended for two operations:

- continuous mixing;
- intermittent mixing (activated by touching the mixing cup with a test tube).

Vortexer PV1 operates at variable speeds from 750 to 3000 RPM providing different mixing intensity (from gentle shaking to vigorous vortexing).

# 3. Getting started

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## 3.1 Unpacking

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

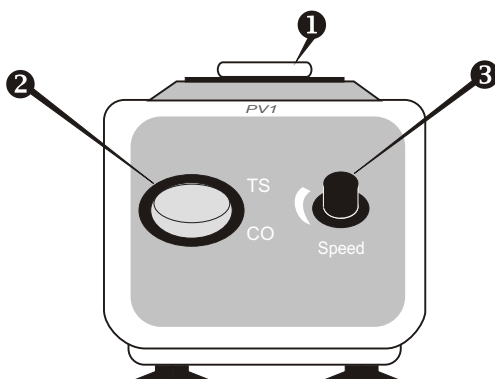
## 3.2 Thermo-Shaker set includes:

- Vortexer PV1 .....1 piece
- External power supply unit.....1 piece
- Operating instructions; Declaration of Conformity .....1 copy

## 3.3 Set up

- place the unit on the working area;
- plug the external power supply into the 12 V socket at the rear side of the unit.

# 4. Operating instructions



4.1 Connect the external power supply to the mains.

## 4.2 Continuous operation mode – CO

4.2.1. Turn the **TS/CO** switch (●) into position CO.

4.2.2. Adjust the necessary speed using the **Speed** knob (●).

4.2.3. Gently holding a tube with fingers at its upper part dip the tube's lower part into the concave cup of the vortexer head (●).

4.2.4. Control the intensity of mixing by varying pressure of a tube to the vortex head.

4.2.5. At the end of operation turn the **TS/CO** switch into position TS.

## 4.3 Touch operation mode – TS

4.4.1. Turn the **TS/CO** switch (●) into position TS.

4.4.2. Gently holding a tube with fingers at its upper part dip the tube's lower part into the concave cup of the vortex head (●). Vortex will be activated when pressing the mixing cup with a test tube.

4.4.3. Adjust the necessary speed (desired mixing level) using the **Speed** knob (●).

4.4.4. Control the intensity by varying pressure of a tube to the vortex head (●).

4.4 At the end of operation disconnect the external power supply from the mains.

# 5. Specifications

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The product is designed for operation indoors in a laboratory at altitudes up to 2000 m, with ambient temperature from +4°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 control range .....750-3000 RPM (max. speed depends on loading)
- Maximum continuous operation time .....8 hrs
- Mixing module for tubes .....from 1.5 to 50 ml
- Maximum mixing volume .....30 ml
- Orbit .....4 mm
- Dimensions .....90x150x80 mm
- Input current/power consumption .....12V, 320 mA / 3.8 W
- External power supply ..... input AC 100-240 V 50/60Hz, output DC 12V
- Weight with power supply, not more .....1,1 kg

Grant is committed to a continuous programme of improvement, specifications may be changed without notice.



# 6. Guarantee and Service

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## 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.

# Declaration of Conformity

Manufacturer:

BIOSAN LTD.  
Ratsupites 7, build.2, Riga, LV-1067, Latvia

Equipment name/type number:

PV1

Description of Equipment:

Personal vortex

Directive:

EMC Directive 2004/108/EC  
Low Voltage Directive 2006/95/EC

Applied Standards

EN 61326:

Electrical equipment for  
measurement, control and laboratory use -  
EMC requirements

Harmonized Standards:

Part 1: General requirements

EN 61010:

Safety requirements for electrical  
equipment for measurement, control and  
laboratory use.

Part 1:

General requirements

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

  
.....  
Svetlana Bankovska  
Executive Director  
Biosan Ltd.

Dated ..... 31.01.2011 .....



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