Grant bio

Multi Vortex Mixer
V-32

Operating instructions

For version V.1GW

Contents

1. Safety and precautions

1.1. General safety

☞ The Multi Vortex Mixer V-32 is constructed so as to meet the requirements of international safety standard IEC 61010-2-051: Safety requirements for electrical equipment for measurement, control, and laboratory use - Part 2-051: Particular requirements for laboratory equipment for mixing and stirring, including:

EN 61010-2-051;

BS EN 61010-2-051.

The power supply unit is certified to international and national standards (see Certification marks on the unit).

A copy of the Declaration of Conformity with CE requirements is included at the back of this manual.

Caution: Make sure you have fully read and understood the present Operating instructions before using the equipment. Please pay special attention to sections marked by this symbol.

1.2. General safety

☞ Use only as specified in the Operating instructions provided.

☞ The unit should not be used if dropped or damaged.

☞ After transportation or storage keep the unit under room temperature for 2-3hrs before connecting it to the electric circuit.

☞ Use only cleaning and decontamination methods recommended by the manufacturer.

☞ Do not make modifications to the design of the unit.

1.3. Electrical safety

☞ Connect only to the external power supply unit with 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.

- ☞ Disconnect the unit from electric circuit before moving.
- ☞ Disconnect the external power supply unit from power socket to turn off the unit.
- ☞ If liquid penetrates into the unit, disconnect it from the external power supply unit and have it checked by a repair and maintenance technician.

1.4. During operation

- ☞ Do not impede the platform motion.
- ☞ Do not operate the unit in environments with aggressive or explosive chemical mixtures.
- ☞ Do not operate the unit if it is faulty or has been installed incorrectly.
- ☞ Do not use outside laboratory rooms.
- ☞ Do not start operation at maximum speed.
- ☞ Do not place a load exceeding the maximum load value mentioned in the Specifications section of these Operating instructions.

1.5. Biological safety

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

2. General Information

The Multi Vortex Mixer V-32 is specially designed for life science research. It can be used in biochemical, microbiological, medical, and industrial biotechnology laboratories. Among its uses are:

- intensive stirring of bacterial and yeast cells;
- washing from culture medium;
- extraction of metabolites and enzymes from cells and cell cultures;
- performing DNA operations such as deproteinisation of DNA/protein complexes;
- purification of low-molecular DNA/RNA fragments in PCR diagnostic research.

The Multi Vortex Mixer V-32 is supplied with a platform for up to 32 microtubes, with 16 sockets for 1.5 ml tubes, 8 sockets for 0.5 ml tubes and 8 sockets for 0.2 ml tubes. A head is also supplied for mixing a single tube of up to 15 ml. An additional platform is available to hold six 15 ml tubes with a maximum diameter of 16 mm.

As well as continuous motion, for hand-held tubes the vortex can be set to run only while a button is pressed.

3. Getting started

3.1 Unpacking

Remove packing materials carefully, and retain them for future shipment or storage of the centrifuge.

Examine the unit carefully for any damage incurred during transit. The warranty does not cover in-transit damage.

3.2 The unit set includes

Standard set:

- Multi Vortex Mixer V-32 with PV-32 universal platform with 32 sockets ❶ .....1 piece
- PL-1 head for single-tube mixing .....1 piece
- external power supply unit .....1 piece
- Operating Manual, including CE Certificate .....1 copy

Optional accessories:

- PV6-10 platform head with 6 sockets for 10 ml tubes ❸ .....on request

❶

❷

❸

3.3 Set up

– place the unit on a clean, even, horizontal, working area;

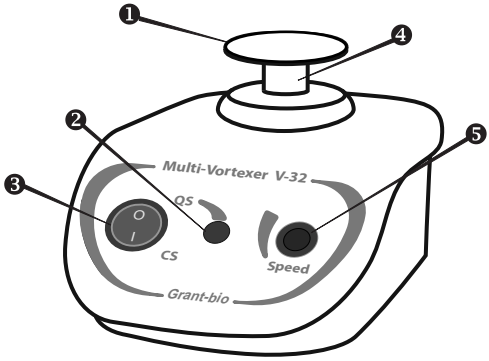
Note! Regularly clean suction cup feet of the unit in order to improve their adhesion with desk surface.

– plug the external power supply unit into the 12 V socket at the rear side of the unit.

3.4. Platform replacement

– release two screws on the rear side of the platform holder (❹);
– lift and replace the platform;
– fixate the screws.

4. Operation of V-32



4.1. Connect the external power supply unit to electric circuit.

4.2. **Continuous operation mode**

4.2.1. When using the universal platform head: place microtubes on the platform.

4.2.2. Turn the **QS/CS** switch (fig.1/❸) into **CS** position. The head will start moving.

4.2.3. Set the required speed using the **Speed** knob (fig.1/❺).

4.2.4. When using the head for single tube vortexing: gently holding a tube with fingers at its upper part press the tube's lower part against the head (fig.1/❶).

4.2.5. After finishing the operation turn the **QS/CS** switch into **QS** position.

4.3. **Impulse operation mode**

4.3.1. Turn the **QS/CS** switch (fig.1/❸) into **QS** position.

4.3.2. Gently holding a tube with fingers at its upper part press the tube's lower part against the head (fig.1/❶). Press the **QS** button (fig.1/❷) to start vortexing.

4.3. 3. Set the required speed using the **Speed** knob (fig.1/❺).

4.4. Disconnect the external power supply unit from electric circuit.

5. Specifications

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** .....500–3000 rpm
- **Acceleration time** .....3 sec
- **Maximum continuous operation time** .....8 hours
- **Orbit** .....2 mm
- **Maximum load**.....70 gr
- **Dimensions** .....120x180x100 mm
- **Input current/power consumption**.....12V, 320 mA / 3.8 W
- **External power supply unit** ..... input AC 100-240 V 50/60Hz, output DC 12V
- **Weight***.....1.5 kg

Optional accessories	Description
PV6-10	6-socket platform for 10 ml tubes (max.tube diameter 15 mm)

Replacement parts	Description
PV-32	32-socket universal platform for Microtube type tubes up to 1.5 ml (1.5/0.5/0.2 ml — 16/8/8 sockets)
PL-1	platform for single tube vortexing, tube volume range form 1.5 to 50 ml**

* Accurate within ±10%.
** For efficient mixing it is recommended to fill test tube up to 50% of the rated volume.

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

6. Guarantee and Service

6.1 Guarantee

When used indoors in laboratory conditions and in accordance with these working instructions, the V-32 is guaranteed for TWO YEARS against faulty materials or workmanship.

6.2 Service

Equipment requiring repair should be sent to our Service Department in the UK or in other countries to our distributor.

6.3 Cleaning & disinfection

Standard ethanol (75%) or other cleaning agents recommended for cleaning of laboratory equipment can be used for cleaning and disinfection of the unit.

Regularly clean support suction feet for improvement of their adhesion with desk surface.

- to clean the support suction feet and desk surface use mild soap and water with a soft cloth or sponge.
- wipe excess water from support suction feet and desk surface with an absorbent soft cloth or sponge.

Declaration of Conformity

Manufacturer:	BIOSAN LTD. Ratsupites 7, build.2, Riga, LV-1067, Latvia
Equipment name/type number:	V-32
Description of Equipment:	Multi vortex mixer
Directives:	EMC Directive 2004/108/EC Low Voltage Directive 2006/95/EC

Applied Standards	
Harmonized Standards:	**EN 61326-1:** Electrical equipment for measurement, Control and laboratory use - EMC requirements General requirements **EN 61010-1:** Safety requirements for electrical equipment for measurement, control and laboratory use. General requirements **EN 61010-2-051:** Particular requirements for laboratory equipment for mixing and stirring

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

.....

Dated ...01.06.2011.....

Svetlana Bankovska
Executive Director
Biosan Ltd.

Grant bio

Grant Instruments
(Cambridge) Ltd
Shepreth
Cambridgeshire
SG8 6GB
UK
Tel: +44 (0) 1763 260811
Fax: +44 (0) 1763 262410
Email: scientificsales@grantinstruments.com
www.grantinstruments.com

Multi Vortex Mixer/V-32/28279/1.03