

Multi Vortex Mixer V-32

Operating instructions

For version V.1GW



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

- ☞ Use only as specified in the operating instructions provided.
- ☞ The unit should be saved from shocks or drops.
- ☞ After transport or storage allow the unit to dry out (2-3 hrs) before connecting to the mains.
- ☞ Clean the unit with a damp cloth, using water only. Do not use chemical cleaning agents. Before using any other cleaning or decontamination method, check with the manufacturer or supplier to make sure that the proposed method will not damage the equipment.
- ☞ Do not make modifications to the design of the unit.


1.2. 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 it from the mains.
- ☞ To turn off 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.

1.3. During operation

-  Do not impede the platform motion 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.
-  Do not start operation at maximum speed.
-  Do not place a load exceeding maximum loading mentioned in p. Specifications.

1.4. Biological safety

-  It is the user's responsibility to carry out appropriate decontamination if hazardous material is spilled on or inside 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 Eppendorf tubes, 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.

3.2 The unit set includes

Standard set:

- Multi Vortex Mixer V-321 piece;
- Universal platform head with 32 sockets VP-11 piece;
- Head for single-tube mixing PL-11 piece;
- External power supply unit1 piece;
- Operating Manual, including CE Certificate1 copy.

Optional accessories:

- VP-8/15 platform head with 6 sockets for 10 ml tubes1 piece.

3.3 Set up

- place the unit on the clean, even, horizontal, working area;



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

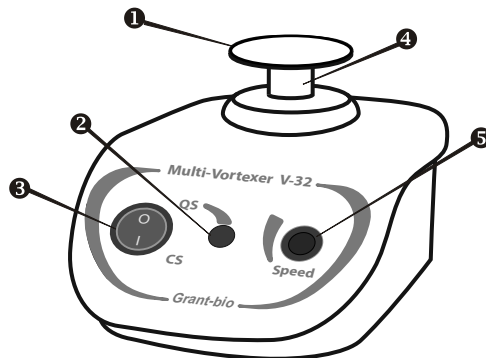
- plug the external power supply into the 12 V socket at the rear side of the unit.

3.4. Accessories

To change the platform head:

- release two screws on the rear side of the head holder (⚙);
- lift and replace the head;
- fixate the screws.

4. Operation of V-32



4.1. Connect the external power supply to the mains.

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 (3) into position **CS** (Continuous Spin). The head starts moving.
- 4.2.3. Adjust the necessary speed using the **Speed** knob (5).
- 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 (1).
- 4.2.5. At the end of operation turn the **QS/CS** switch into position **QS**.

4.3. Impulse operation mode

- 4.3.1. Turn the **QS/CS** switch (3) into position **QS** (Quick Spin).
- 4.3.2. Gently holding a tube with fingers at its upper part press the tube's lower part against the head (1). Press **QS** button (2) to start vortexing.
- 4.3.3. Adjust the necessary speed using the **Speed** knob (5).

4.4. Disconnect the external power supply from the mains.

5. Maintenance

No routine maintenance is required, but regular cleaning is recommended (see section 1.1).

6. 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** input AC 100-240 V 50/60Hz, output DC 12V
- **Weight (with power supply unit), not more**1,8 kg

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

Replacement parts	Description
VP-1	32-socket universal platform for Eppendorf type tubes up to 1.5 ml (1.5/0.5/0.2 ml — 16/8/8 sockets)
PL-1	platform for vortexing single tube, tube volume range form 1,5 to 50 ml*

* 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.

7. Guarantee and Service

7.1 **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.

7.2 **Service**

Equipment requiring repair should be sent 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:	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)


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

Dated 01.06.2011.....

Grant bio

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