

Grant-bio

Multi Vortexer V-32

Operating instructions



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1. Safety and precautions

1.1 Safety

The 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.

1.2 Precautions before first operating the vortexer

-  Read the whole of these instructions, Safety or performance may be impaired if these instructions are not followed.
-  If the vortexer has been transported or stored in cold or humid conditions, condensation may form inside it. If that could have happened, allow time for the condensation to evaporate before using the vortexer. The vortexer could be damaged if it is switched on before the condensation has evaporated.
-  Use the mixer only with the power supply provided, which has an output of 12 V d.c.
-  Make sure that the mains switch and power supply plug are easily accessible during use.
-  The safety of the unit may be impaired if it is not used in accordance with the instructions given in this manual. Refer to section 3.2 for available accessories.

1.3 Precautions during and after operation

-  Do not stop the platform by hand during operation.
-  Do not use the vortexer in an area where there are aggressive or explosive chemical mixtures.
-  If liquid is split onto or inside the vortexer, 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 the equipment.
-  Clean the vortexer 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.
-  Disconnect the power supply unit from the mains supply socket after using the vortexer.
-  If the vortexer is dropped, examine it carefully before using it again to see that it has not been damaged.
-  Do not use the unit for work with flammable materials.

2. General Information

The V-32 Multi-Vortexer 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 vortexer 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 vortexer can be set to run only while a button is pressed.

3. Getting started

3.1 Unpacking

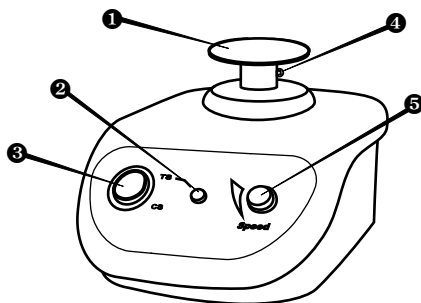
Remove packing materials carefully, and retain them for future shipment or storage of the centrifuge.

3.2 PMV-1 standard equipment includes:

- Multi-Vortexer V-32 1 piece;
- Universal platform head with 32 sockets VP-1 1 piece;
- Head for single-tube mixing..... 1 piece;
- External power supply unit 1 piece;
- Operating Manual, including CE Certificate 1 copy.

If ordered, there will also be one additional platform head with 6 sockets VP-8/15 for 10 ml tubes.

4. Operation of V-32



4.1 Preparation

- 4.1.1 Fit the required head, held by two screws (4).
- 4.1.2 Plug the power supply unit into a mains socket and its output connector into the back of the vortexer.

4.2 Multi-tube operation using platform head

- 4.2.1 Place tubes in the platform sockets. Do not push 1.5 ml tubes too far down, as they could scrape the top of the case.
- 4.2.2 Turn the TS/CS switch (3) to position CS to start rotation.
- 4.2.4 Adjust the speed with the knob (5).
- 4.2.5 To stop, turn the TS/CS switch (3) to position TS.

4.3 Operation using the single-tube head

- 4.3.1 Turn the TS/CS switch (3) to position CS for continuous agitation or to TS for agitation only when the TS button (2) is pressed.
- 4.3.2 Hold a tube near its top gently with two fingers, and press its bottom lightly against the head (1).
- 4.3.3 Adjust the speed using the speed knob (5).
- 4.3.5 If the TS/CS switch (3) is in position CS, turn it to position TS to stop agitation.

4.4 Unplug the power supply unit from the mains socket.

5. Maintenance

No routine maintenance is required, but regular cleaning is recommended (see section 1.3).

6. Specifications

The V-32 Multi-Vortexer is designed for operation indoors in a laboratory with 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 range**.....500 - 3000 r.p.m.
- **Time to accelerate to full speed**.....3 sec
- **Orbit**.....2 mm
- **Number of sockets in standard platform:**
 - for 1.5 ml tubes 16
 - for 0.5 ml tubes 8
 - for 0.2 ml tubes 8
- **Number of sockets in special platform**
 - for 10 ml tubes (max diameter 16 mm)6
- **Power supply unit**
 - Input..... 100-240 V, 50-60 Hz, 0.6 A
 - Output..... 12 V d.c. 1.25 A
- **Dimensions**..... 120x180x100 mm
- **Weight**Vortexer 1.3 kg
Power supply unit 0.3 kg

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

Supplier:-	GRANT INSTRUMENTS (CAMBRIDGE) LTD, Shepreth, Cambridgeshire SG86GB
Equipment name/type number:-	V-32
Description of Equipment:-	Multi-Vortexer
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)



R. Philpott,
Director,
Grant Instruments (Cambridge) Ltd

Applied Standards:-	
Harmonized Standards:-	EN 61326: Electrical equipment for measurement, control and laboratory use - EMC requirements, Part 1: General requirements EN 61010: Safety requirements for electrical equipment for measurement, control and laboratory use. Part 1: General requirements, Second edition, 2001, as modified by Part 2-051: Particular requirements for laboratory equipment for mixing and stirring, Second edition, 2003.

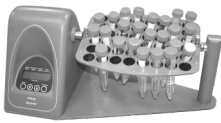
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