V-1 plus, V-32

Vortex for tubes

Instructions for use

If you have any feedback on our products or services, we would like to hear from you. Please send all feedback to:

Manufacturer:

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Contents

1. About this edition of the instructions for use

1.1. The current edition of the instructions for use (IFU) applies to:

V-1 plus, personal vortex	version V.4AW
V-32, multi-vortex	version V.2AW

1.1.1. Revision number: 2.-4.04.
1.1.2. Release date: April of 2026.

1.2. Symbols used in this IFU

Caution! Pay special attention to sections marked with this symbol.

2. Safety precautions

2.1. General warnings:

Caution! Make sure you have fully read and understood the present Manual before using the equipment.

2.2. Icons used on the unit and packaging:

CE	CE marking, see **12.1**
	WEEE directive marking, see **12.1**

	Polarity of the power connector
	Equipment uses direct current

2.3. General safety

- Use only as specified in the operating instructions provided.
- Do not use the unit if dropped or damaged.
- Store and transport the unit as described in section **Storage and transportation**.
- Before using any cleaning or decontamination methods 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.

2.4. Electrical safety

- Connect only to a power supply with voltage corresponding to that on the serial number label.
- Use only the external power supply unit provided with this product.
- Ensure that the power switch and the external power supply connector are easily accessible during use.
- Disconnect the unit from the electric circuit before moving.
- Turn off the unit by disconnecting the external power supply from the power socket.
- If liquid penetrates into the unit, disconnect it from the external power supply unit and have it checked by a repair and maintenance technician.
- Do not operate the unit in premises where condensation can form. Operating conditions of the unit are defined in the **Specifications** section.

2.5. During operation

- Do not impede the platform motion.
- Do not operate the unit in environments with aggressive or explosive chemical mixtures. Please contact manufacturer for possible operation of the unit in specific atmospheres.
- Do not operate the unit if it is faulty or has been installed incorrectly.
- Do not use outside laboratory rooms.
- Do not place a load exceeding the maximum load value mentioned in the Specifications section of this Instructions.

2.6. Biological safety

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

3. General information

V-1 plus and **V-32** vortexes are designed for intensive mixing of samples in tubes using an eccentric mechanism. They are suitable for biotechnology, microbiology, and medical laboratories, including mixing tissue, chemical, bacterial and yeast samples, suspending cells, extracting metabolites and enzymes, and vortexing during DNA/RNA procedures. Both models offer continuous and impulse modes for operation.

V-1 plus is a personal vortex with a fluoroplastic head for single tubes up to 50 ml. **V-32** includes a 32-socket platform (**PV-32**) for 2–0.2 ml tubes and a **PL-1** platform for single tubes up to 50 ml, with optional platforms **PV-6/10** for 10 ml tubes and **PV-48** for strips or 0.2 ml microtubes.

4. Getting started

4.1. **Unpacking**. Carefully remove and keep the packaging for future transport or storage. Inspect the unit for any transit damage. The warranty excludes in-transit damage and applies only to units shipped in the original packaging.

4.2. **Complete set**. Package contents:

4.2.1. V-1 plus

- V-1 plus, personal vortex ..... 1 pce.
- External power supply ..... 1 pce.
- Instructions for use, declaration of conformity ..... 1 copy

4.2.2. V-32

- V-32, multi-vortex ..... 1 pce.
- External power supply ..... 1 pce.
- PV-32, universal platform ..... 1 pce.
- PL-1, single tube vortexing head ..... 1 pce.
- Instructions for use, declaration of conformity ..... 1 copy
- PV-6/10, platform ..... 1 pce, on request
- PV-48, platform for strips ..... 1 pce, on request

PV-32

PL-1

PV-6/10

PV-48

4.3. **Setup**.

- Place the unit on a clean, even, horizontal working area, set in place by firmly pressing on the unit to adhere the suction cups;
- Plug the power plug of the external power supply into power socket on the rear side of the unit.

4.3.1. Platform replacement (model **V-32**):

- Using a flat screwdriver, unscrew black screw at the middle of the platform (fig. 2/1) and remove it together with the washer.
- Using a Phillips screwdriver, loosen two fixing screws (fig. 2/3) on the rotor under the platform.
- Remove and replace the platform (fig. 2/2), fix the platform in place in opposite order.

5. Operation with model V-1 plus

5.1. Connect the external power supply to the mains.

5.2. While gently holding a tube by its upper part, press the lower part to the vortex head (fig. 1/1). During rotation of the rotor, control the intensity of shaking by varying applied pressure.

Caution! To achieve effective vortexing, do not fill the tubes for more than 50% of volume.

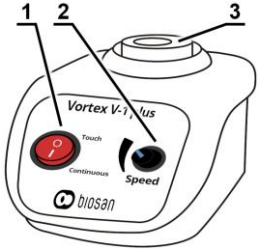

Figure 1. V-1 plus, front view

5.3. **Continuous shaking mode**.
5.3.1. Turn the **I/O** switch (fig. 1/2) to position **Continuous**.
5.3.2. Set the required speed by turning the **Speed** knob (fig. 1/3).
5.3.3. After finishing the operation, turn the switch into position **O/Touch**.

5.4. **Impulse shaking mode**.
5.4.1. Turn the **I/O** switch (fig. 1/2) to position **Touch**.
5.4.2. Set the required speed by turning the **Speed** knob (fig. 1/3).
5.4.3. Push the tube on the vortex head (fig. 1/1) and hold for vortexing. Rotor stops when the tube is raised.

5.5. **Ending operations**. Disconnect the external power supply from the mains outlet.

6. Operation with model V-32

6.1. Connect the external power supply to the mains.

6.2. When shaking several tubes, place the tubes on the platform.

6.3. When shaking single tube (**PL-1** head), while gently holding a tube by its upper part, press the lower part to the vortex head. During rotation of the rotor, control the intensity of shaking by varying applied pressure.

Caution! To achieve effective vortexing, do not fill the tubes for more than 50% of volume.

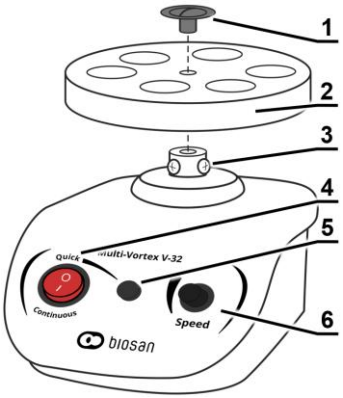

Figure 2. V-32, front view

6.4. **Continuous shaking mode**.
6.4.1. Turn the **I/O** switch (fig. 2/4) to position **Continuous**.
6.4.2. Set the required speed by turning the **Speed** knob (fig. 2/6).
6.4.3. After finishing the operation, turn the switch into position **O/Quick**.

6.5. **Quick shaking mode**.
6.5.1. Turn the **I/O** switch (fig. 2/4) to position **O/Quick**.
6.5.2. Set the required speed by turning the **Speed** knob (fig. 2/6).
6.5.3. Position the tube on the vortex head, press and hold **Quick** button (fig. 2/5) for vortexing. Rotor stops when the button is released.

6.6. **Ending operations**. Disconnect the external power supply from the mains outlet.

7. Specifications

7.1. Biosan is committed to a continuous programme of improvement and reserves the right to alter design and specifications of the equipment without additional notice.

7.2. Vortexing specifications

	V-1 plus	**V-32**
Speed control range	500–3000 rpm	
Acceleration time	2 s	3 s
Maximum continuous operation[1]	24 hours	
Tube volume	0.2–50 ml	
Maximum load	30 g	70 g

7.3. General specifications

Orbit	4 mm	2 mm
Dimensions (with platform)	90x150x80 mm	120x180x100 mm
Working voltage and current	12 V=, 320 mA	
Power consumption	3.8 W	
External power supply	in 100–240 V~, 50–60 Hz, out 12 V=	
Weight, accurate within ±10%	0.8 kg	1.5 kg

7.4. Workroom requirements

Workroom description	Cold rooms and closed laboratory rooms, incubators (except CO_2 incubators)
Temperature range	+4 °C … +40 °C
Humidity requirements	Maximum of 80% RH at 31 °C, decreasing linearly to 50% RH at 40 °C. Non-condensing atmosphere.
Operating height, maximum	2000 m ASL
Overvoltage category	I
Pollution degree	2

[1] Maintain at least 1 hour long pause between prolonged continuous operations

8. Ordering information

8.1. Models and versions available:

Model	Version	Catalogue number
V-1 plus, personal vortex	V.4AW	BS-010203-AAG
V-32, multi-vortex	V.2AW	BS-010207-AAG

8.2. To inquire about or order optional accessories or replacement parts, contact Biosan or your local Biosan representative.

8.2.1. Optional platforms for **V-32**:

Platform description	Catalogue number
PV-6/10, for 6x10 ml tubes, Ø$_{max}$ 15 mm	BS-010207-BK
PV-48, for 6 strips of 8x0.2 ml or 48x0.2 microtubes	BS-010207-GK

8.2.2. Replacement platforms for **V-32**:

Platform description	Catalogue number
PV-32, for 16x1.5 ml, 8x0.5 ml and 8x0.2 ml Eppendorf-type microtubes	BS-010207-CK
PL-1, for single tube vortexing, up to 50 ml	BS-010207-AK

9. Maintenance

9.1. **Service**.

9.1.1. If the unit is disabled (e.g., no vortexing or reaction to key presses, etc) or requires maintenance, disconnect the unit from the mains and contact Biosan or your local Biosan representative.

9.1.2. All maintenance and repair operations (except listed below) must be performed only by qualified and specially trained personnel.

9.1.3. Operating integrity check. If the unit follow the procedure described in sections **Operation**, then no additional checks are required.

9.2. **Cleaning and disinfection**.

9.2.1. Clean the exterior with mild soap and water using a soft cloth or sponge. Rinse any residue with distilled water and wipe dry.

9.2.2. Regularly clean the suction feet to maintain adhesion to the work surface.

9.2.3. To disinfect the exterior plastic parts, use 75% ethanol or DNA/RNA removing solution (e.g., Biosan PDS-250). Wipe the surfaces dry.

9.2.4. The unit and its accessories are not autoclavable.

9.3. **Decommissioning of the unit.** The user is responsible for the decontamination of the unit before decommissioning. Dispose of the appliance as electronic equipment in accordance with the relevant national laws.

10. Storage and transportation

10.1. Store and transport the unit at ambient temperatures between -20°C and +60°C and maximum relative humidity of 80%.
10.2. After transportation or storage and before connecting it to the electric circuit, keep the unit under room temperature for 2-3 hrs.
10.3. For extended storage, the unit does not require special procedures.

11. Warranty and claims

11.1. The manufacturer guarantees the compliance of unit with the requirements of specifications, if the customer follows the operation, storage and transportation instructions.

11.2. The warranted service life of unit from date of delivery to the customer is 24 months. For extended warranty, see **11.5**.

11.3. Warranty covers only the units transported in the original package.

11.4. If manufacturing defects are found, the Customer must complete, certify, and send an unsatisfactory equipment report to the local distributor. The claim form is available in the **Technical support** section on our website.

11.5. Extended warranty for **V-1 plus** and **V-32** – *Basic Plus* class models – is a paid service. Contact your local Biosan representative or our service department via the Technical support section on our website.

11.6. Description of the classes of our products is available in the **Product class description** section on our website at the link below.

Technical support

biosan.lv/en/support

Product class description

biosan.lv/classes-en

11.7. The following information will be required in the event that warranty or post-warranty service comes necessary. Complete the table below and retain for your records.

Model	Serial number	Date of sale
V-1 plus / V-32 Vortexes for tubes		

11.8. **Production date**. Production date is placed in the serial number, on the label of the unit. Serial number consists of 14 digits styled XXXXXXYYMMZZZZ, where XXXXXX is model code, YY and MM – year and month of production, ZZZZ – unit number.

12. EU Declaration of conformity

12.1. Personal vortex **V-1 plus** and multi-vortex **V-32** are in conformity with the following relevant Union legislations:

LVD 2014/35/EU	**LVS EN 61010-1:2011 + A1:2019** Safety requirements for electrical equipment for measurement, control, and laboratory use. General requirements. **LVS EN 61010-2-051:2021** Particular requirements for laboratory equipment for mixing and stirring.
EMC 2014/30/EU	**LVS EN 61326-1:2013** Electrical equipment for measurement, control and laboratory use. EMC requirements. General requirements.
RoHS3 2015/863/EU	Directive on the restriction of the use of certain hazardous substances in electrical and electronic equipment.
WEEE 2012/19/EU	Directive on waste electrical and electronic equipment.

12.2. Declaration of Conformity is available for the relevant model on our website by links below, in the **Downloads** section:

V-1 plus

V-32

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Edition 2.-4.04 – April of 2026