Medical–Biological
Research & Technologies

FV-2400, FVL-2400N, MSC-3000, MSC-6000

Centrifuges/Vortexes



DOMINIQUE DUTSCHER

User instructions

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

Manufacturer:

SIA Biosan
Ratsupites 7 k-2, Riga, LV-1067, Latvia

Phone: +371 674 261 37
Fax: +371 674 281 01

https://biosan.lv
Marketing: marketing@biosan.lv
Service: service@biosan.lv

DOMINIQUE DUTSCHER

Contents

1. About this edition of user instructions....3
2. Safety precautions....3
3. General information....5
4. Getting started....6
5. Operation....8
6. Specifications....11
7. Ordering information....12
8. Care and maintenance....13
9. Storage and transportation....13
10. Warranty. Production date....14
11. EU Declaration of conformity....15

1. About this edition of user instructions

1.1 The current edition of the user instructions applies to the following models:

Model and name	Version
FV-2400 Micro-Spin, mini-centrifuge/vortex	V.1AA, V.1AB, V.1AC, V.1AD
FVL-2400N Combi-Spin, mini-centrifuge/vortex	V.2AA, V.2AB, V.2AC, V.2A3, V.2A12
MSC-3000 Multispin, centrifuge/vortex	V.3AW
MSC-6000 Multispin, centrifuge/vortex	V.4AY

1.2 Edition 1.-4.03 – April of 2022

2. Safety precautions

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

2.1 Icons used on the unit and packaging

CE	CE marking, manufacturer affirms conformity with European health, safety, and environmental protection standards, see **11.1**
	WEEE directive marking, see **11.1**
	Polarity of the power connector (**MSC-3000** & **MSC-6000**)
	Equipment uses direct current (**MSC-3000** & **MSC-6000**)
	Do not touch the rotor by hand during run-up, operation or run-down (**FV-2400**, **FVL-2400N** & **MSC-3000**)

DOMINIQUE DUTSCHER

2.2 General safety

- The protection provided can be ineffective if the operation of the appliance does not comply with the manufacturer's requirements.
- Save the unit from shocks and falling.
- Store and transport the unit as described in section **Storage and transportation**.
- Use only original parts and accessories, provided by manufacturer for this product.
- 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 in design of the unit.

2.3 Electrical safety

- Connect only to the mains with voltage and frequency corresponding to that on the serial number label.
- Use only the external power supply (**MSC-3000** & **MSC-6000**) provided with the unit.
- Do not plug the unit into an ungrounded power socket, and do not use an ungrounded extension lead.
- Ensure that the power plug is easily accessible during use.
- Disconnect the unit from the mains before moving.
- If liquid penetrates the unit, disconnect it from the mains 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 section **Specifications**.

2.4 During operation

- 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 leave the operating unit unattended.
- Do not fill in the tubes after they are inserted in the rotor.
- Do not use rotors with visible signs of corrosion, wear, or mechanical damage.
- Observe the safety area of 300 mm around the unit. Personnel and hazardous materials must not be located in the safety area whilst the unit is operating.
- Do not centrifuge flammable or chemically active substances. If such liquids are spilled on the rotor or rotor chamber, the centrifuge must be cleaned with a moist cloth and a mild soap solution.
- (**FVL-2400N** & **MSC-3000**) Do not open lid during work, run-up or run-down of the motor.

2.5 Biological safety

- According to EN 61010-2-20, a centrifuge without a lid gasket is not considered a biologically safe system and therefore cannot be used for centrifuging hazardous materials contaminated with toxic, radioactive, or pathogenic microorganisms.
- The user is responsible to carry out appropriate decontamination if hazardous material spills on or penetrates into the equipment.

DOMINIQUE DUTSCHER

3. General information

The model range of centrifuges/vortexes is designed with the ability to shake and separate samples in one device. Mini-centrifuges/vortexes **Microspin FV-2400** and **Combi-Spin FVL-2400N** are equipped with centrifugation and vortexing modules on a common spin-module. Centrifuge/vortex **Multi-Spin**, models **MSC-3000** and **MSC-6000**, provides work on the original patented spin-mix-spin technology.

The spin-mix-spin technology (SMS technology) is designed to collect (or reset) micro quantitative volumes of reagents to the bottom of the tube (the first centrifugation or spin), then vortexing (mix) and re-collecting reagents (repeated spin) from the walls and cap of a microtube. This repetitive algorithm of operations, aimed at reducing sample preparation errors (e.g., for PCR analysis), we call the SMS algorithm (see table below). The patented algorithm was invented by the Doctor of Biology V. Bankovsky.

Specifications		**Microspin FV-2400**	**Combi-Spin FVL-2400N**	**Multi-Spin MSC-3000**	**Multi-Spin MSC-6000**
Maximum speed		2800 RPM		3500 RPM	6000 RPM
Relative centrifugal force (RCF)		500*g*		800*g*	2350*g*
Tube vortexing		1 individually		12 simultaneously	
Tube protection		–	Protective lid and auto stop		Lid and lock
Time to run a Spin-Mix-Spin cycle	For 2 tubes	60 s		25 s	15 s
	For 12 tubes	5-6 min		1 min 30 s	1 min
	For 100 tubes	60 min		15 min	10 min
Price comparison		1x	1.3x	1.9x	2.1x

Manual execution of the SMS algorithm using a centrifuge-vortex requires time (up to 60 minutes for 100 tubes) and is not free of subjectivity during the centrifugation and vortexing stage. This has long been a limiting factor in the acceleration of the PCR analysis.

Areas of use:

- Reproducible vortexing of samples in test tubes.
- Centrifugation of samples.
- Reproducible realization of spin-mix-spin cycles.
- Sample preparation before enzymatic reactions.
- Collection of micro quantities of samples before PCR reactions.
- Permeabilization of cells with chelating or hydrophobic substances for *in situ* reactions.
- Testing of difficultly soluble components.
- Washing of cells from culture medium after fermentation.
- Preparation of samples before immersion in gel for electrophoresis.
- Technology of utilizing magnetic particles with different coatings.

Ideal for the treatment of small amounts of liquid (precipitation / vortexing of micro-quantities of the mixture in Eppendorf tubes with enzyme reactions before thermal incubation in heating / cooling thermostats such as dry-block, thermal cyclers, etc.). Saves working space in laminar and PCR boxes by combining 2 instruments in one.

Automatic shutdown of the rotor when opening the cover (models **FVL-2400N** and **MSC-3000**) and locking the cover during the operation of the **MSC-6000** model guarantee the safe operation of centrifuges.

DOMINIQUE DUTSCHER

4. Getting started

4.1 **Unpacking.** Remove packing materials carefully and retain them for future shipment or storage of the unit. Examine the unit carefully for any damage incurred during transit. The warranty does not cover in-transit damage. Warranty covers only the units transported in the original package.

4.2 **Complete set.** Package contents:

4.2.1 Standard set for **FV-2400** or **FVL-2400N**:

- Minicentrifuge-vortex ..... 1 pce.
- Spare fuse ..... 1 pce.
- R-0.5/0.2M rotor (only **FV-2400**) ..... 1 pce.
- R-1.5M rotor (only **FV-2400**) ..... 1 pce.
- R-0.5/0.2 rotor (only **FVL-2400N**) ..... 1 pce.
- R-1.5 rotor (only **FVL-2400N**) ..... 1 pce.
- Vortex head with 2 mm eccentric ..... 1 pce.
- User instructions, declaration of conformity ..... 1 copy

4.2.2 Standard set for **MSC-3000** or **MSC-6000**:

- Minicentrifuge-vortex ..... 1 pce.
- External power supply and power cable ..... 1 pce.
- R-0.5/0.2 rotor ..... 1 pce.
- R-1.5 rotor ..... 1 pce.
- Pin for rotor removal ..... 1 pce.
- User instructions, declaration of conformity ..... 1 copy

4.2.3 Optional accessories:

- R-2/0.5 rotor ..... on request
- R-2/0.5/0.2 rotor ..... on request
- SR-16 rotor ..... on request
- SR-32 rotor (except **FV-2400**) ..... on request
- SR-64 rotor (only **FV-2400**) ..... on request



R-0.5/0.2M



R-1.5M



R-0.5/0.2



R-1.5

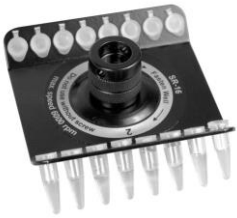


R-2/0.5



R-2/0.5/0.2

DOMINIQUE DUTSCHER



SR-16



SR-32



SR-64

4.3 **Setup**.

- Place the unit upon even horizontal stable non-flammable surface 30 cm away from any flammable materials, and clear 20 cm around the device on all sides for ventilation.

Note. Regularly clean **FV-2400** and **MSC-3000** support suction feet for improvement of adhesion to desk surface.

- Remove the protective film from the display (**MSC-3000** & **MSC-6000**).
- Connect the power cable to the external power supply (**MSC-3000** & **MSC-6000**).
- Connect the power cable to the socket on the rear side of the unit and position it with easy access to the power switch and plug (**MSC-3000** & **MSC-6000**).
- According to EN 61010-2-20, people and hazardous materials must not be within a 300 mm area around the device during the centrifuge operation.

4.4 **Rotor replacement**.

Caution! Check the rotor for any signs of wear and replace if necessary.

4.4.1 **FV-2400** & **FVL-2400N**. To change a rotor (fig. 1/2 or 2/3), hold it with one hand and turn the vortex head (fig. 1/1 or 2/2) counterclockwise to set rotor free. Change the rotor and secure the vortex head.

4.4.2 **MSC-3000** & **MSC-6000**. To change a rotor (fig. 3/3), open the lid.

Note. In model MSC-6000, lid is unlocked only when the unit is powered. Connect the external power supply to the grounded mains socket to switch on the unit. Alternatively, see **5.4.9**. Do not force the lid open.

Insert the pin for rotor removal into the opening in the fixation head (fig. 3/2). Hold the rotor with one hand and turn the fixation head (using the pin as a lever) counterclockwise to set rotor free. Change the rotor and fix it in place in reverse order. Close the lid and disconnect the external power supply from the mains.

DOMINIQUE DUTSCHER

5. Operation

5.1 Recommendations during operation

- Check the rotor for any signs of wear and replace if necessary.
- Insert tubes in the rotor sockets, maintaining symmetry relative to the centre of the rotor. The opposite tubes must be filled equally.
- Do not fill the tubes in the rotor.

Note. (**FV-2400** and **FVL-2400N**) Remember that the angle of hydrodynamic shift as well as the force of pressing to the vortex head are decisive factors of sediment dissolution effectiveness.

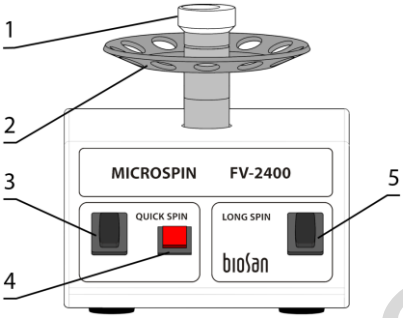


Figure 1. FV-2400

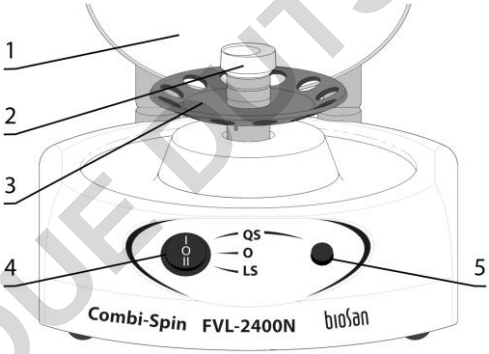


Figure 2. FVL-2400N

5.2 Working with **FV-2400**.

5.2.1 Connect the unit to a properly grounded mains socket.

5.2.2 **Operation in the quick centrifugation mode**. Insert tubes in the rotor sockets, maintaining balance. Switch the **QUICK SPIN** switch (fig. 1/3) into position **I** (on). Press and hold the red key (fig. 1/4) for quick mixing. After releasing the key, the rotor stops automatically. Switch the **QUICK SPIN** switch into position **O** (off) and remove the tubes.

5.2.3 **Operation in the vortexing mode**. Empty the rotor. Switch the **QUICK SPIN** switch into position **I**. While gently holding the tube, press the bottom part of the tube in the vortex head cavity (fig. 1/1). Press and hold the red key for vortexing. After releasing the key, the rotor stops automatically. Switch the **QUICK SPIN** switch into position **O**.

5.2.4 **Operation in the long centrifugation mode**. Insert tubes in the rotor sockets, maintaining balance. Switch the **LONG SPIN** switch (fig. 1/5) into position **I** (on). The rotor starts the movement. Switch the **LONG SPIN** switch into position **O** (off), wait until the rotor stops and remove the tubes.

5.2.5 After operation, disconnect the unit from the mains.

DOMINIQUE DUTSCHER

5.3 Working with **FVL-2400N**

5.3.1 Connect the unit to a properly grounded mains socket.

5.3.2 **Operation in the quick centrifugation mode**. Open the lid (fig. 2/1). Insert tubes in the rotor sockets, maintaining balance. Close the lid. Switch the power switch (fig. 2/4) into position **I** (**QS**, quick spin). Press and hold the **QS** key (fig. 2/5) for quick mixing. After releasing the key, the rotor stops automatically. Switch the power switch into position **O** (off), wait until the rotor stops, open lid and remove the tubes.

Caution! Do not open the lid during rotor work, run-up, or shutoff. The unit stops automatically when the lid is open.

5.3.3 **Operation in the vortexing mode**. Empty the rotor and close the lid. Switch the power switch into position **I**. While gently holding the tube, press the bottom part of the tube in the vortex head cavity (fig. 2/2). Press and hold the **QS** key for vortexing. After releasing the key, the rotor stops automatically. Switch the power switch into position **O**.

5.3.4 **Operation in the long centrifugation mode**. Open the lid. Insert tubes in the rotor sockets, maintaining balance. Close the lid. Switch the power switch into position **II** (**LS**, long spin). The rotor starts the movement. Switch the power switch into position **O** (off), wait until the rotor stops, open lid and remove the tubes.

Caution! Do not open the lid during rotor work, run-up, or shutoff. The unit stops automatically when the lid is open.

5.3.5 After operation, disconnect the unit from the mains.

5.4 Working with **MSC-3000** and **MSC-6000**.

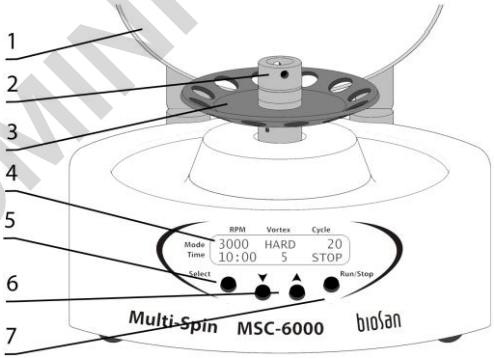


Figure 3. MSC-3000 and MSC-6000

5.4.1 Connect the external power supply to the grounded mains socket. Display (fig. 3/4) lights up and lid (fig. 3/1) unlocks (**MSC-6000**).

5.4.2 Open the lid and insert tubes in the rotor sockets, maintaining balance. Close the lid.

5.4.3 **Parameter setting**. Press the **Select** key (fig. 3/5) to choose a parameter to change. Each consecutive press of the **Select** key sequentially activates parameters in cycle. The active parameter will be blinking. Use ▲ and ▼ keys (fig. 3/6) to set the necessary value. Pressing the key down longer than 2 s will make the values change quickly.

DOMINIQUE DUTSCHER

5.4.3.1 The program can also be changed during operation. Unit automatically applies the last changes on the new cycle of the program.

5.4.3.2 Both models can perform centrifugation and vortexing motions individually and one after another in a cycle, with separate timer for each motion and a cycle counter.

Note. Parameters for centrifugation and vortexing can be found in section **Specifications**.

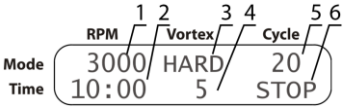


Figure 4. SMS-algorithm

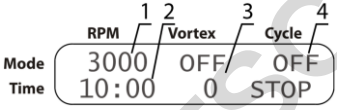


Figure 5. Centrifugation

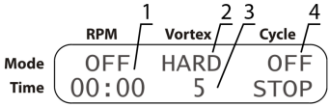


Figure 6. Vortexing

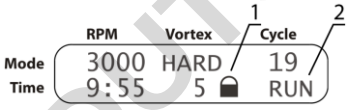


Figure 7. Display during operation

5.4.3.3 Listed below are possible modes with different motions.

- **SMS-algorithm**. Set the centrifugation speed (fig. 4/1) and time (fig. 4/2). Set the vortexing intensity (fig. 4/3) and time (fig. 4/4). Set the number of SMS-algorithm cycles (fig. 4/5).
- **Centrifugation**. Set the centrifugation speed (fig. 5/1) and time (fig. 5/2). Turn off vortexing by setting the time to zero (indication OFF, fig. 5/3). Note that the cycle counter turns off (indication OFF, fig. 5/4).
- **Vortexing**. Turn off the centrifugation by setting the time to zero (indication OFF, fig. 6/1). Set the vortexing intensity (fig. 6/2) and time (fig. 6/3). Note that the cycle counter turns off (indication OFF, fig. 6/4).

5.4.4 Press the **Run/Stop** key (fig. 3/7) to start the program. Display shows indication RUN (fig. 7/2) and, for **MSC-6000**, lid lock symbol (/, fig. 7/1).

5.4.5 After the set number of cycles is performed, the unit stops, display shows blinking indication STOP (fig. 4/6), accompanied by a sound signal. Press the **Run/Stop** key to stop the signal. Model **MSC-6000** unlocks the lid after the rotor stops. Open the lid and remove the tubes.

5.4.6 If necessary, operation can be stopped at any time by pressing the **Run/Stop** key.

5.4.7 To repeat operation with the set parameters, press the **Run/Stop** key.

5.4.8 After operation, disconnect the unit from the mains.

Note. In model MSC-6000, lid is unlocked only when the unit is powered. Connect the external power supply to the grounded mains socket to switch on the unit. Do not force the lid open.

5.4.9 **MSC-6000 lid emergency opening**.

5.4.9.1 Disconnect the external power supply from the mains and wait for the rotor to stop. Move the centrifuge to the front of the bench to access the emergency opening slot on the underside of the unit, next to the right front foot. Avoid tilting the centrifuge as this may cause spilling of the materials from the containers inside the centrifuge.

5.4.9.2 Insert a small screwdriver or a similar tool with diameter up to 3 mm into the emergency opening slot to 15 mm depth. Move the tool as a lever from one side to another with one hand and open the lid with another.

DOWNLOADED BY SCHE

6. Specifications

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

6.2 Rotation specifications

Model	FV-2400	FVL-2400N	MSC-3000	MSC-6000
Centrifugation mode	Fixed[1], 2800 or *3500* RPM		1000 – 3500 RPM	1000 – 6000 RPM
Relative centrifugal force	Fixed[1], 500g or *700g*		Up to 800g	Up to 2350g
Centrifugation timer	–		1 s – 99 min	1 s – 30 min
Vortexing mode	Single tube		Full rotor	
Vortexing intensity	Manual pressure		Soft, medium, hard	
Vortexing timer	–		0 – 20 s	
SMS-cycle regulation	–		1 – 999 cycles	
Extended operation, maximum	up to 60 minutes		up to 7 hours	

Caution! After an extended operation, allow the minicentrifuge to cool down for 1 h before resuming.

6.3 General specifications

Model	FV-2400	FVL-2400N	MSC-3000	MSC-6000
Tube protection	–	Stop at open lid		Lid lock
Display	–		LCD, 2x16 symbols	
Dimensions, mm	120x170x120	190x235x125		
Weight, accurate within ±10%	1.4	1.7	2.1	2.5
Power consumption, W	30		11	24
Input voltage	230 V~, 50 Hz or *120/230 V~, 60 Hz*		100–240 V~, 50/60 Hz	
External power supply	–		12 V=	24 V=

6.4 Workroom requirements

Workroom description	Cold rooms, incubators (except CO_2 incubators) and closed laboratory rooms
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 (FV-2400 & FVL-2400N) II (MSC-3000 & MSC-6000)
Pollution degree	2

[1] Depending on the frequency of the input current

DOMINIQUE DUTSCHER

7. Ordering information

7.1 Models and versions available:

Model	Version	Description	Catalogue number
FV-2400	V.1AA	230 V, 50 Hz, EU plug (type E/F)	BS-010201-AAA
	V.1AB	230 V, 50 Hz, UK plug (type G)	BS-010201-AAB
	V.1AC	120 V, 60 Hz, US plug (type B)	BS-010201-AAC
	V.1AD	230 V, 50 Hz, Australian plug (type I)	BS-010201-AA3
FVL-2400N	V.2AA	230 V, 50 Hz, EU plug (type E/F)	BS-010202-AAA
	V.2AB	230 V, 50 Hz, UK plug (type G)	BS-010202-AAB
	V.2AC	120 V, 60 Hz, US plug (type B)	BS-010202-AAC
	V.2A3	230 V, 50 Hz, Australian plug (type I)	BS-010202-AA3
	V.2A12	230 V, 60 Hz, Brazilian plug (type N)	BS-010202-A13
MSC-3000	V.3AW	100–240 V, 50/60 Hz	BS-010205-AAN
MSC-6000	V.4AY	100–240 V, 50/60 Hz	BS-010211-AAL

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

7.2.1 Optional rotors.

Description	Catalogue number
R-2/0.5 rotor, for 8x2 and 8x0.5 ml microtubes	BS-010205-CK
R-2/0.5/0.2 rotor, for 6x2, 6x0.5 and 6x0.2 ml microtubes	BS-010205-DK
SR-16 rotor, for 2 strips of 8x0.2 ml microtubes	BS-010202-AK
SR-32 rotor, for 4 strips of 8x0.2 ml microtubes, for all, **except FV-2400**	BS-010205-FK
SR-64 rotor, for 8 strips of 8x0.2 ml microtubes, only for **FV-2400**	BS-010201-EK

7.2.2 Replacement parts:

Description	Catalogue number
R-1.5M rotor, for 12x1.5 ml microtubes	BS-010201-AK
R-0.5/0.2M rotor, for 12x0.5 and 12x0.2 ml microtubes	BS-010201-DK
R-1.5 rotor, for 12x1.5 ml microtubes	BS-010205-AK
R-0.5/0.2 rotor, for 12x0.5 and 12x0.2 ml microtubes	BS-010205-BK

TRANSLATION DUTCH

8. Care and maintenance

8.1 **Service**.

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

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

8.1.3 Operating integrity check. If the unit follows the procedure described in section **Operation**, then no additional checks are required.

8.2 **Cleaning and disinfection**.

8.2.1 Use mild soap and water with a soft cloth or sponge for cleaning the exterior. Rinse remaining washing solution with distilled water. Wipe dry the excess water with clean, soft cloth or sponge.

8.2.2 Regularly clean **FV-2400** and **MSC-3000** support suction feet for improvement of adhesion to desk surface.

8.2.3 To disinfect the plastic parts, use 75% ethanol or DNA/RNA removing solution (e.g., Biosan PDS-250). After disinfecting it is necessary to wipe the surfaces dry.

8.2.4 The rotors are autoclavable, at 120°C, for 20 min. The unit itself is not autoclavable.

8.3 **Fuse replacement (FV-2400 & FVL-2400N).** Disconnect the unit from electric circuit. Open the fuse holder located on rear side of the device by turning its cover counterclockwise. Replace with the correct fuse, T 250 mA for 230 V or T 500 mA for 120 V (type **T** - time lag: fast).

8.4 **Disposal**. Disposal of the appliance requires special precautions and must be carried out at an appropriate disposal site, separate from normal household waste. To prevent pollution of the environment, all waste resulting from the disposal of the product must be collected and disposed of in the country of use, in accordance with the applicable requirements for the handling of electronic waste.

9. Storage and transportation

9.1 Store and transport the unit in a horizontal position (see package label) at ambient temperatures between -20°C and +60°C and maximum relative humidity of 80%.

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

9.3 For extended storage, the unit does not require special procedures.

DOMINIQUE DUTSCHER

10. Warranty. Production date

10.1 The Manufacturer guarantees the compliance of the unit with the requirements of Specifications, provided the Customer follows the operation, storage, and transportation instructions.

10.2 The warranted service life of the unit from the date of its delivery to the Customer is 24 months. For extended warranty, see **10.5**.

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

10.4 If any manufacturing defects are discovered by the Customer, an unsatisfactory equipment report shall be compiled, certified, and sent to the local distributor address. To obtain the claim form, visit **Technical support** page on our website at link below.

10.5 Extended warranty.

- For **MSC-3000** & **MSC-6000**, the *Premium* class models, one year of extended warranty is available free of charge after registration, during 6 months from the date of sale. Online registration form can be found in section **Warranty registration** on our website at the link below.
- For **FV-2400** & **FVL-2400N**, the *Basic Plus* class models, extended warranty is a paid service. Contact your local Biosan representative or our service department through the **Technical support** section on our website at the link below.

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

Technical support	Registration	Product class description
biosan.lv/en/support	**biosan.lv/register-en**	**biosan.lv/classes-en**

10.7 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
FV-2400, FVL-2400N, MSC-3000, MSC-6000 Centrifuges/Vortexes		

10.8 **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.

DOMINIQUE DUTSCHER

11. EU Declaration of conformity

11.1 Mini-centrifuges/vortexes **FV-2400 Micro-Spin** and **FVL-2400N Combi-Spin** and centrifuges/vortexes **MSC-3000 Multispin** and **MSC-6000 Multispin** are in conformity with the following relevant Union legislations:

LVD 2014/35/EU	**LVS EN 61010-1:2011** Safety requirements for electrical equipment for measurement, control, and laboratory use. General requirements. **LVS EN 61010-2-020:2016** Particular requirements for laboratory centrifuges.
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.

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

FV-2400 **FVL-2400N** **MSC-3000** **MSC-6000**

DOMAQUE DUTSCHE

DOMINIQUE DUTSCHE

SIA Biosan
Ratsupites 7 k-2, Riga, LV-1067, Latvia
Phone: +371 67426137 Fax: +371 67428101
https://biosan.lv

Edition 1.-4.03 – April of 2022