

CPS-20

Compact CO₂ Platform Shaker



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

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1 About this edition of user instructions

The current edition of user instructions applies to following models:

Model	Version
CPS-20 , compact CO ₂ platform shaker	V.1AW

2 Safety precautions



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

2.1 General safety

- Save the unit from shocks or falling.
- Store and transport the unit in a horizontal position (see package label) at ambient temperatures between -20°C and $+60^{\circ}\text{C}$ and maximum relative humidity of 80%.
- After transportation or storage keep the unit under room temperature for 2-3 hrs before connecting it to the mains.
- 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.
- The safety of the equipment may be impaired if the equipment is used with accessories not specified by the manufacturer or if the equipment is used in a manner not specified by the manufacturer.
- Hazards may occur if the equipment is used to mix flammable or explosive materials.
- Do not mix materials where the transfer of mechanical energy to glass could lead to a breakage.

2.2 Electrical safety

- Connect only to external power supply with voltage corresponding to that on the serial number label.
- Use only the external power supply provided with this product.
- Ensure that the external power supply is easily accessible during use.
- Disconnect the unit from the mains 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 power socket 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.

2.3 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 these instructions.

2.4 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

CO₂ Shaker **CPS-20** provides regulated orbital motion of the platform and is designed for use specifically in CO₂ incubators. **CPS-20** is specifically designed for use in harsh environments such as CO₂ and humidity and provides reproducible results for cell culture growth. A choice of 5 interchangeable platforms provides the possibility of performing various procedures and techniques in various cultivation vessels. The specially designed remote controller allows for protection of electronics from CO₂ incubator environment, as well as, does not interfere with the experiment.

Shaker **CPS-20** incorporates a brushless motor with a guaranteed service life up to 35,000 hours. The unit is equipped with a triple eccentric mechanism for platform motion that provides supreme balancing characteristics, superior reliability and quiet operation. Typical applications include eukaryotic cells cultivation.

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

- **CPS-20** Orbital Shaker 1 piece
- External power supply 1 piece
- Remote controller 1 piece
- Operating instructions, declaration of conformity 1 copy

4.2.2 Optional accessories

- UP-12 platformon request
- Additional HB-200 holding bar for UP-12 platformon request
- Bio PP-4 platformon request
- P-16/88 platform.....on request
- P-12/100 platform.....on request
- P-6/250 platform.....on request



UP-12



Bio PP-4



P-16/88



P-12/100



P-6/250

4.3 **Platform installation.** Install the platform to the moving base of the shaking unit. Fit the pins on the underside of the platform into the holes on the moving base.

4.4 Setup.



Note. The CO₂ incubator must be not operating, switched off and in non-condensing environment during the installation of CO₂ shaker.

- Gently pull the control cable apart at the middle connector.
- Thread the longer part of the control cable (connected to the shaking unit) through the opening port in the CO₂ incubator, from inside to outside.
- Seal the opening as shown by the instructions for the incubator (e.g., with PE seal that comes with the CO₂ incubator)
- Place the shaking unit inside the CO₂ incubator positioned on an even horizontal and firm surface place. Make sure that the control cable does not obstruct the movement of the platform.
- Accurately connect the control cable in the middle, outside of the CO₂ incubator. Align ends by the white marking on the rim. Do not force the connection.
- Remove protective film from the display.
- Plug the external power supply into the 12 V socket at the bottom of the unit controller and position the power supply so that the plug is easily accessible.
- The unit controller features magnets on the back. If possible and necessary, put the unit controller on the outer wall or a door of the CO₂ incubator.

5 Operation

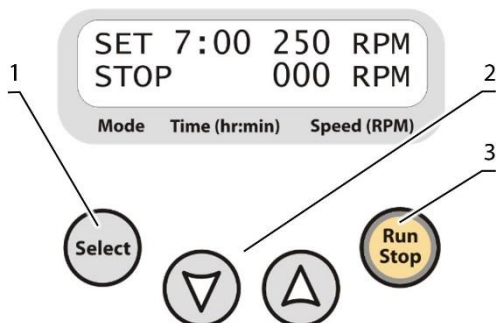


Figure 1. Control panel of CPS-20

- 5.1 Connect the external power supply to the mains. Display turns on.
- 5.2 Place samples on the unit platform.
- 5.3 **Setting the parameters.** Press the **Select** key (fig. 1/1) to choose the parameter to change. Each pressing of the **Select** key consecutively activates the parameters. The active parameter is flashing. Use the ▼ and ▲ keys (fig. 1/2) to set the necessary value. Pressing the key for more than 2 s increases the speed of value change.
 - 5.3.1 Set the required working time interval in hours and minutes, the increment is 1 minute.
 - 5.3.2 Set the required shaking speed, the increment is 10 rpm.
- 5.4 Press the **Run Stop** key (fig. 1/3). The platform starts rotation, indication RUN appears on display and the timer in the lower line of the display starts counting the time interval.
- 5.5 After the timer reaches the set time, the platform motion will stop and the flashing indication STOP, accompanied by the repetitive sound signal, will appear in the lower line of the display. Press the **Run Stop** key to shut down the signal.
- 5.6 The unit can be stopped before the set time elapses if necessary by pressing the **Run Stop** key. Press the **Run Stop** key to repeat the operation with the same working time and speed.
- 5.7 If the working time is not set (or is reset) and the Time indicator on display shows OFF, pressing the **Run Stop** key will start continuous operation of the unit until the **Run Stop** key is pressed.
- 5.8 The platform motion can be stopped at any time by pressing the **Run Stop** key. In this case, the program realization and the platform motion will stop and the unit will switch into the STOP mode.
- 5.9 After finishing the operation disconnect the external power supply from the mains.

6 Specifications

The shaking unit (without the unit controller) is designed specifically for operation in CO₂ incubators and closed laboratory environments at ambient temperature from +4°C to +45°C in a non-condensing atmosphere and relative humidity up to 98%.

The unit controller is designed for operation in cold rooms, incubators (excluding CO₂ incubators) and closed laboratory rooms at ambient temperature from +4°C to +40°C in a non-condensing atmosphere and relative humidity up to 80% for temperatures for temperatures up to 31°C decreasing linearly to 50% relative humidity at 40°C.

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

Speed control range ¹	50-250 RPM
Increment	10 RPM
Digital time setting	1 min – 96 h or non-stop
Increment	1 minute
Maximum load	3 kg
Orbit	20 mm
Dimensions of the shaking unit, WxDxH	255x255x100 mm
Operating voltage and current	DC 12 V, 470 mA
Power consumption	5.7 W
External power supply	input AC 100-240 V, 50/60 Hz, output DC 12 V
Weight ²	4.2 kg

7 Ordering information

7.1 Models and versions available:

Model	Version
CPS-20, compact CO ₂ platform shaker	V.1AW

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

7.2.1 Optional accessories:

Description	Catalogue number
UP-12, universal platform with bars and non-slip rubber mat (285x215 mm)	BS-010108-AK
Bio PP-4, flat platform with non-slip silicone mat (255x255 mm, work area 230x230 mm)	BS-010116-AK
P-12/100, platform with 12 clamps for 100 ml flasks (250x190 mm)	BS-010108-EK
P-6/250, platform with 6 clamps for 250 ml flasks (250x190 mm)	BS-010108-DK
P-16/88, platform with Spring holder for 88 of 10 to 50 ml tubes	BS-010116-BK
HB-200, additional holding bar for UP-12	BS-010108-FK

¹ Maximum speed depends on the load on the platform and the shape of the vessels.

² Accurate within ±10%.

8 Maintenance

- 8.1 Service.
- 8.1.1 If the unit is disabled (e.g., platform not shaking, no reaction to key presses) 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 cleaning and disinfection below) must be performed only by qualified and specially trained personnel.
- 8.1.3 Operating integrity check. If the unit follow the procedure described in section **Operation**, then no additional checks are required.
- 8.2 Cleaning and disinfection. Standard ethanol (75%) or other cleaning agents recommended for cleaning of laboratory equipment can be used for cleaning and disinfection of the unit.

9 Warranty and registration

- 9.1 The Manufacturer guarantees the compliance of the unit with the requirements of Specifications, provided the Customer follows the operation, storage and transportation instructions.
- 9.2 The warranted service life of the unit from the date of its delivery to the Customer is 24 months (excluding accessories listed in **7.2.1**). For extended warranty, see **9.5**.
- 9.3 Warranty covers only the units transported in the original package.
- 9.4 If any manufacturing defects are discovered by the Customer, an unsatisfactory equipment claim shall be compiled, certified and sent to the local distributor address. To obtain the claim form, visit section **Technical support** on our website at link below.
- 9.5 Extended warranty. For **CPS-20**, the *Premium* class model, 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.
- 9.6 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

Warranty registration



biosan.lv/register-en

Product class description



biosan.lv/classes-en

- 9.7 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
CPS-20 , Compact CO ₂ Platform Shaker		

10 EU Declaration of Conformity

EU Declaration of Conformity

Unit type Rockers, shakers, rotators, vortexes

Models **MR-1, MR-12;**
3D, Multi Bio 3D, PSU-10i, PSU-20i, MPS-1, PSU-2T, CPS-20;
Bio RS-24, Multi Bio RS-24, Multi RS-60;
V-1 plus, V-32, MSV-3500

Serial number 14 digits styled XXXXXXYYMMZZZZ, where XXXXXX is model code, YY and MM – year and month of production, ZZZZ – unit number.

Manufacturer SIA BIOSAN
Latvia, LV-1067, Riga, Ratsupites 7 k-2

The objects of the declaration described above is in conformity with the following relevant Union harmonization 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 61010-2-051:2015 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.

I declare that the Declaration of Conformity is issued under sole responsibility of the manufacturer and belongs to the above-mentioned objects of the declaration.

Svetlana Bankovska
Managing director



Signature

07.02.2020.

Date

how to choose

A PROPER SHAKER, ROCKER, VORTEX

bioSan

Medical-Biological
Research & Technologies

Sample volume
 $10^3 \dots 10^2$ ml

Erlenmeyer flask
and Cultivation flask



Sample volume
 10^1 ml

Petri dishes, vacutainers
and tubes up to 50 ml



Sample volume
 $10^0 \dots 10^{-3}$ ml

PCR plates, microtest plates
and Eppendorf type tubes



PSU-20i,
Orbital Shaker

ES-20/80,
Orbital Shaker-Incubator



Applications:

- Microbiology
- Extraction
- Cell cultivation



PSU-10i,
Orbital Shaker



ES-20,
Orbital
Shaker-Incubator

Applications:

- Agglutination
- Gel staining/destaining



MR-12,
Rocker-Shaker



Multi RS-60,
Programmable rotator

Multi RS-24,
Mini-Rotator

Bio RS-24,
Mini-Rotator



RTS-1 and RTS-1C,
Personal bioreactor



MR-1,
Mini Rocker-Shaker



Multi Bio 3D,
Mini Shaker

Applications:

- Agglutination
- Extraction
- Blot hybridisation
- Gel staining/destaining



Multi Bio RS-24,
Programmable rotator

Applications:

- Microbiology
- Extraction
- Cell cultivation
- Hematology



V-1 plus,
Vortex



MSV-3500,
Multi Speed Vortex

Applications:

- Nucleic acid Analysis
- Molecular Analysis
- Protein Analysis
- Genomic Analysis



PST-60HL-4,
Thermo-Shaker

PST-60HL,
Thermo-Shaker



PST-100HL,
Thermo-Shaker

TS-DW,
Thermo-Shaker
for deep well
plates



Applications:

- ELISA Analysis
- Genomic Analysis
- Hybridization
- Immunology



MPS-1,
Multi Plate Shaker



PSU-2T,
Mini-Shaker



CVP-2,
Centrifuge vortex for PCR plates

TS-100, TS-100C,
Thermo-Shakers



V-32,
Multi-Vortex



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