

CPS-20

Compact CO₂ platform shaker



If you have any feedback on our products or services, we would like to hear from you.
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1. About this edition of instructions for use

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

Model and name	Version
CPS-20, compact CO ₂ platform shaker	V.3AW

1.1.1. Revision number: 3.01

1.1.2. Release date: April of 2026.

1.2. Symbols used in this IFU:



Caution! Please pay special attention to sections marked by this symbol.

2. Safety precautions

2.1. General warnings:



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

2.2. Icons used on the unit and packaging:

	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
	Equipment uses direct current
	Before the installation in an incubator, read the user instructions!

2.3. General safety

- Save the unit from shocks or falling.
- 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 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.

2.4. 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.

2.5. 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 these instructions.

2.6. Biological safety

- It is the user's responsibility to carry out appropriate decontamination if hazardous material is spilled 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 pce
- External power supply 1 pce
- Remote controller 1 pce
- Instructions for use, declaration of conformity 1 copy

4.2.2. Optional accessories, on request:

- UP-12 platform..... 1 pce
- Additional HB-200 holding bar for UP-12 platform 1 pce
- Bio PP-4 platform..... 1 pce
- P-16/88 platform 1 pce
- P-12/100 platform 1 pce
- P-6/250 platform 1 pce



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

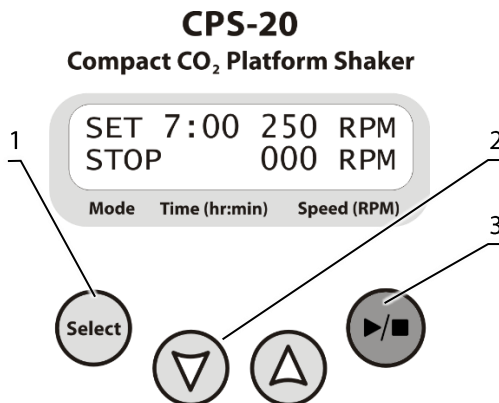


Figure 1. Control panel of CPS-20

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 ▶/■ 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 ▶/■ key to shut down the signal.

5.6. The unit can be stopped before the set time elapses, if necessary, by pressing the ▶/■ key. Press the ▶/■ 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 ▶/■ key will start continuous operation of the unit until the ▶/■ key is pressed.

5.8. **Power interruption.** In case of mains/power failure, the unit is not equipped with automatic restart function, which requires the user to reinitiate the platform motion manually.

5.9. After finishing the operation disconnect the external power supply from the mains.

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. Shaking specifications

Speed control range 50–250 RPM



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

Speed increment 10 RPM

Digital time setting 1 min – 96 h or non-stop

Timer increment 1 minute

Continuous operation time 168 h / 7 days



Note. For the protection of motor components, recommended cooldown time between operation sessions must be not less than 8 hours.

6.3. General specifications

Maximum load 3 kg

Orbit 20 mm

Dimensions of the shaking unit, WxDxH 290x200x100 mm

Operating voltage 12 V=

Operating current 470 mA

Power consumption 5.7 W

External power supply input 100–240 V~, 50–60 Hz, output 12 V=

Weight, accurate within $\pm 10\%$ 3.4 kg

6.4. Workroom requirements

CPS-20 part	Shaking unit (w/o controller unit)	Controller unit
Workroom description	Specifically designed for CO ₂ incubators. Cold rooms and closed laboratory rooms, incubators	Cold rooms and closed laboratory rooms, incubators (excluding CO ₂ incubators)
Temperature range	+4 °C ... +40 °C	+4 °C ... +45 °C
Humidity requirements	Maximum of 98% RH. Non-condensing atmosphere.	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	

7. Ordering information

7.1. Models and versions available:

Model	Version	Electrical parameters	Catalogue number
CPS-20, compact CO ₂ platform shaker	V.3AW	230 V~, 50–60 Hz, EU plug (type E/F)	BS-010172-A01
		100–240 V~, 50–60 Hz, multiplug (EU, UK, AU, US)	BS-010172-A02

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

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.

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

8.2.3. The platforms are autoclavable, 15 min at 121 °C. The unit itself is not autoclavable.

8.3. **Disposal of the unit.** The user is responsible for decontaminating the unit when it is taken out of service. Dispose of the unit as electronic equipment in accordance with the relevant national laws.

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.

10. Warranty and registration

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 (excluding accessories listed in 7.2.1). 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 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.

10.5. Extended warranty. For **CPS-20**, the *Basic plus* class model, extended warranty is a paid service. Please contact Biosan or your local Biosan representative.

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



biosan.lv/en/support

Product class description



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
CPS-20, Compact CO ₂ Platform Shaker		

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 XXXXXYYMMZZZZ, where XXXXXX is model code, YY and MM – year and month of production, ZZZZ – unit number.

11. EU Declaration of Conformity

11.1. Compact CO₂ Platform Shaker **CPS-20** is 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 61010-2-051:2015 Particular requirements for laboratory equipment for mixing and stirring.
EMC 2014/30/EU	LVS EN 61326-1:2021 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:



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